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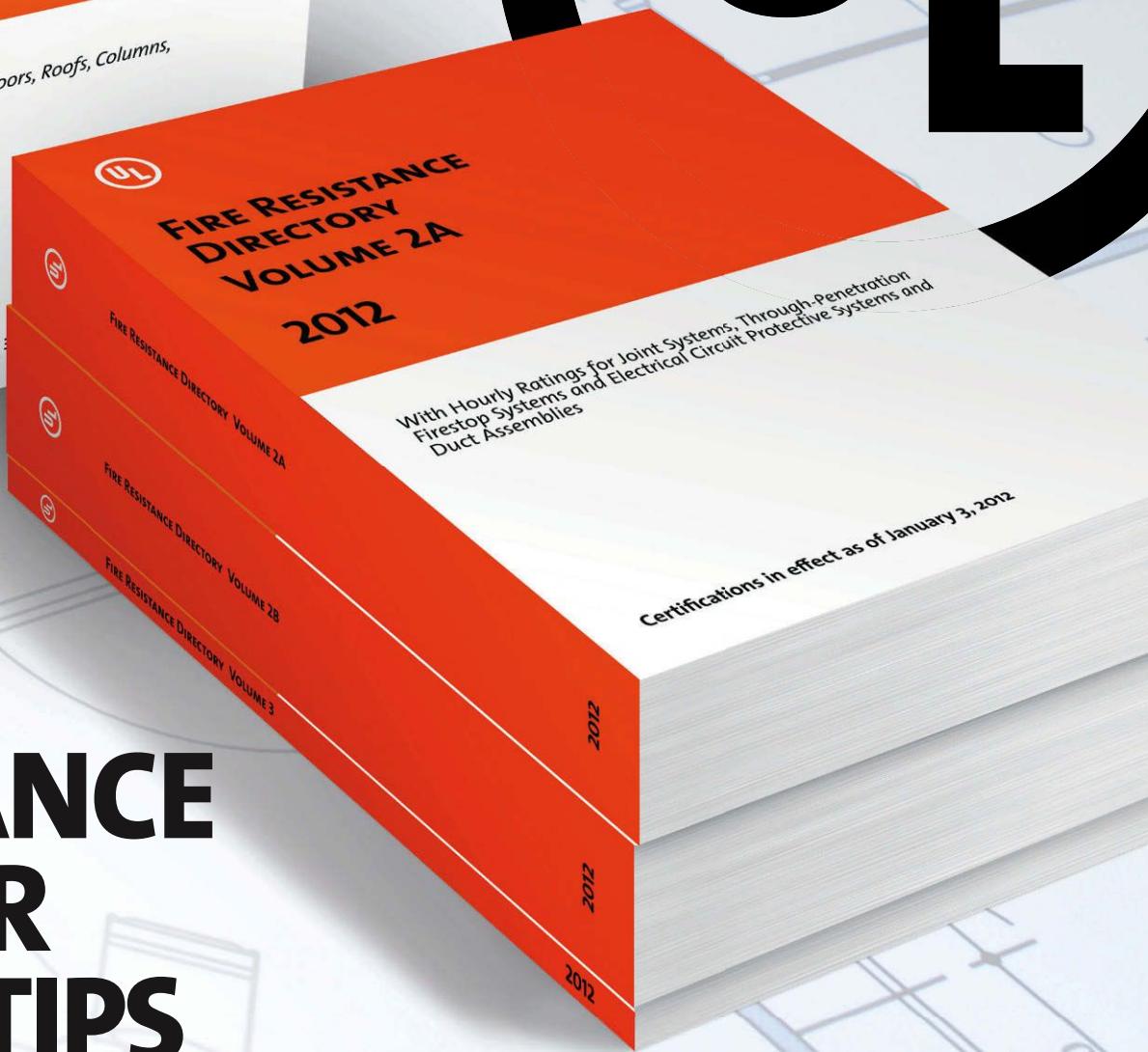
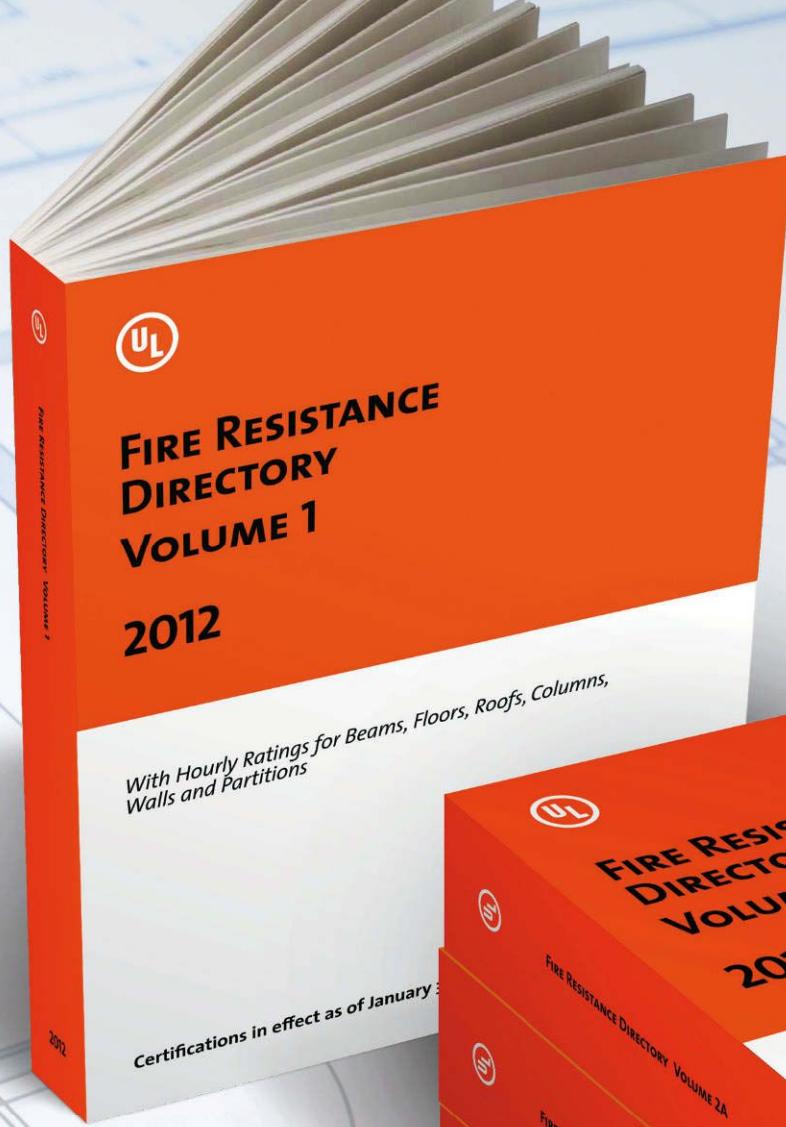
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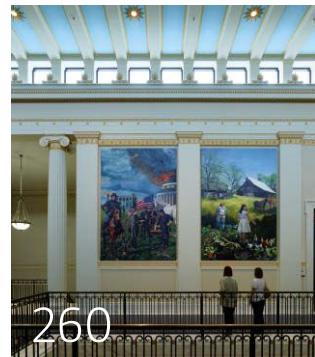
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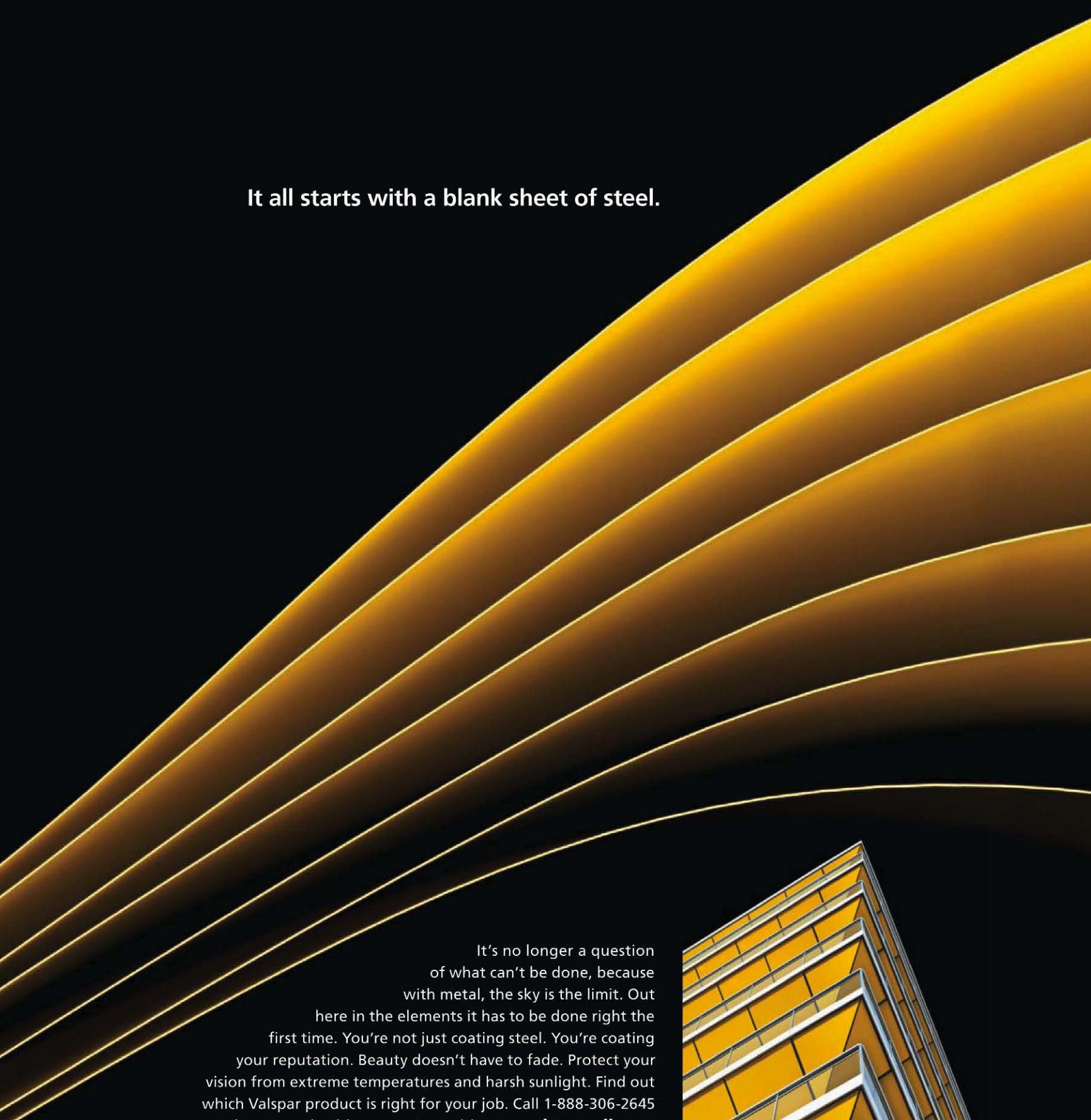
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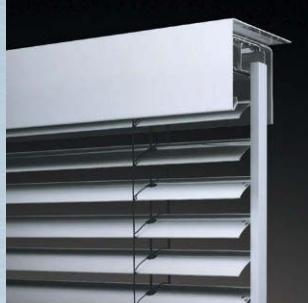
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THE TALES OF GSA CONFERENCE EXCESS SIMPLY DON'T JIBE WITH PECK'S REPUTATION, AND THEY RUN COUNTER TO MY OWN EXPERIENCES WITH THE AGENCY ITSELF.

THE SCAPEGOAT

CONGRESSIONAL HEARINGS rank high on my list of occasions worth avoiding, right up there with Civil War reenactments and junior-high dances. Just thinking about a roomful of grandstanding legislators gives me the creeps. So I felt for Robert Peck, Hon. AIA, when he was called before a House committee last month to testify about a case of financial malfeasance at the U.S. General Services Administration (GSA).

One of the 2012 recipients of the AIA's Thomas Jefferson Award (see page 238), recognizing his two separate stints as commissioner of the GSA's Public Buildings Service, Peck has been summarily dismissed because of the controversy. This is alarming news. During the Clinton administration, Peck created the Design Excellence Program, which has led to a vastly improved standard of design for government buildings (see page 260 for an example). Under President Obama, he has implemented higher sustainability and performance standards. Public architecture has lost its champion.

You've probably heard about how the acting commissioner of the agency's Pacific Rim region, Jeffrey Neely, spent \$823,000 on a conference in Las Vegas for 300 staff, and about how it took nine scouting trips to find just the right venue. You've seen the cringe-inducing snapshots of Neely by the pool and in the hot tub, and you've read the mind-blowing invitation he emailed to a friend: "We'll get you guys a room near us, and we'll pick up the room tab. ... I know, I'm bad. But as Deb and I say often, why not enjoy it while we have it and while we can. Ain't going to last forever."

That friend isn't a government worker. And the generous "we" to whom Neely refers is GSA, and ultimately the taxpayer. "Deb" is Neely's wife, Deborah, who doesn't work for the government either, but was a major beneficiary of the nation's involuntary largesse, including a 17-day birthday trip to Hawaii, Guam, and Saipan. Neely pleaded the Fifth before the congressional committee and is on paid administrative leave pending further investigation and possible criminal charges.

Neely looks like the real culprit. So why did Peck lose his job while Neely remains on the GSA payroll? The short answer is that Peck was a political appointee, making him much easier to fire than Neely, who, as a career civil servant, is sheltered by layers of due process. But there are reasons, and then there are reasons.

The national press is reporting two ostensible misdeeds on Peck's part: He awarded Neely a \$9,000 bonus, despite apparently knowing about an ongoing internal investigation into the Vegas conference. Also, Peck was in attendance at the conference and hosted an impromptu party in his suite. He says he planned to pay for the party himself and didn't know that an additional \$2,000 catering order that night was charged to the government instead.

Peck served as managing director with Jones Lang LaSalle between his two GSA stints. He clearly has good

friends in the world of commercial real estate, and they have not been shy about voicing their support. According to *The Washington Post*, Richard Bradley, the executive director of the Downtown D.C. Business Improvement District, believes that Peck shouldn't be expected to know details of every single conference his agency held. As commissioner, the *Post* explained, "he was responsible for an annual budget of \$8.6 billion, a workforce of 6,700, and a portfolio of more than 9,600 properties." In the same article, Michael Glosserman, managing partner of real estate firm JBG Companies, said, "It felt to me that examples needed to be made; it was embarrassing to the government, and heads needed to roll at a very high level, and Bob was a victim."

I don't know Peck well. We've only met once or twice in passing. However, I know friends and close colleagues of Peck's, and they've always spoken highly of him. The tales of GSA conference excess simply don't jibe with Peck's reputation, and they run counter to my own experiences with the agency itself—particularly the Design Excellence Program, which I have covered many times as a journalist and curator, and where I serve as a peer professional.

So far, I've participated in only one peer review, of a proposed entrance pavilion for the State Department headquarters in downtown D.C. During the lunch break, all the participants trooped over to the employee cafeteria, where we each grabbed a tray, stood in line, and paid for our own food. There were no scouting trips. Even when I dine socially with friends from Design Excellence, they always insist on going Dutch.

Ultimately, the GSA's internal investigation process worked effectively in rooting out a crime. Bravo. Alas, further investigation and some degree of reform are all but inevitable now, and given the enormity of the agency, no one should be surprised if the witch hunt turns up a few more cases. It is hard not to suspect, cynically, that the reaction to Neelygate is a case of politically convenient, manufactured outrage over an offense that registers as penny-ante compared to, say, the ongoing, federally underwritten abuses of Wall Street and the oil and gas industry.

Bradford McKee, my savvy counterpart at *Landscape Architecture*, made the point beautifully in a recent post: "If I were looking for really serious federal government waste and abuse of tax money, that is, with a few more zeros behind it, GSA would hardly be the first place I'd go looking." Indeed, it's time to let the GSA get back to work. Peck has left the building, but his vision for the betterment of federal architecture must live on.

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LETTERS

59TH ANNUAL PROGRESSIVE ARCHITECTURE AWARDS, February 2012

While I always appreciate the P/A Awards, this year's made me put on my cranky-old-architect hat and comment on the Bond Tower and Hawk House. I realize the images are provided by the designers, but with misleading representations, is it possible for the reader (or the jurors) to make an accurate assessment of the designs? *Steven Lamothe, Weymouth, Mass.*

The Hawk House harkens back to the P/A tradition of baffling drawings that seem deliberately crafted to obfuscate. This result is a side effect of crafting odd, eye-catching drawings that are seductive on a graphic level, leading to awards given as much for graphic manipulation as for architectural merit. I suspect the jury and the designer share fault with the editors.

Kenneth M. Moffett, AIA, Knoxville, Tenn.

THE BURDEN OF HISTORY, April 2012

Eric Wills's perceptive article [about the Barnes museum] missed some important reasons for the move from Merion. The original location created understandable concerns by neighbors about traffic.

This resulted in severe limitations on hours of operation and attendance—a visit two years ago required reservations six weeks in advance. Williams and Tsien's sublime design for a jaw-dropping collection of art is a magnificent addition to the Benjamin Franklin Parkway as envisioned by Jacques Greber. Best of all, these treasures will now be open to a public never before welcomed. *James Nelson Kise, FAIA, Philadelphia*

As a long-time Merion resident living within walking distance of the Barnes, I have come to a ... [change of heart] regarding the collection's relocation. For many years, our community was torn between having one of the greatest art collections in the world and the nuisance it created. Tour buses that crowded the local streets gave way to lawsuits filed by residents. Upon the collection's return after the 1990s traveling tour, it seemed as if it was clamoring beyond the walls of the Barnes's home. I soon realized that the collection no longer belonged in Merion, but in a place where it could be viewed without restriction. I view the Barnes relocation as a tremendous gift to art lovers and students everywhere, and not a loss to Merion, or an affront to the wishes of Dr. Barnes.

Greg Nowell, AIA, Merion, Penn.

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Contributors



Justin Davidson

As *New York* magazine's architecture critic, Justin Davidson has written about urban design topics ranging from public benches to Manhattan's Hudson Yards project, from the demolition of a block of small businesses on the Upper West Side to museums by celebrity architects. Davidson also covers classical music for the magazine, where he has been on staff since 2007. Before that, he spent 12 years as classical music critic at *Newsday*, where he also wrote about architecture and was a regular commentator on cultural issues. He won a Pulitzer Prize for criticism in 2002, and an American Society of Newspaper Editors criticism award. Born and raised in Rome, Davidson moved to the U.S. to attend Harvard University. He later earned a doctoral degree in music composition at Columbia University. He has contributed to *The New Yorker*, *W*, *Travel + Leisure*, *Condé Nast Traveler*, the *Los Angeles Times*, *Slate*, and *Salon*, and is a regular columnist for the website eMusic. He is a member of the faculty of the Design Criticism program at the School of Visual Arts.

→ See Justin Davidson's profile of Gold Medal–winner Steven Holl on page 192.

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NEWSWIRE

EDITED BY KRISTON CAPP



[THE NEW YORK TIMES](#)

Brutalism debate takes center stage

The New York Times invited thinkers to weigh in on the merits of Paul Rudolph's Orange County government building in Goshen, N.Y., a seemingly doomed Brutalist landmark.



[THE NEW YORK OBSERVER](#)

Paul Goldberger leaves *The New Yorker*

Architecture critic Paul Goldberger's decision to leave *The New Yorker* for *Vanity Fair* may mean that New York is down a critic—as he will write on a wider range of topics under Graydon Carter.



[THE WASHINGTON POST](#)

Congress reconsiders Height Act

Rep. Darrell Issa (R-Calif.), the chair of the House Oversight and Government Reform Committee, says that Congress could reconsider height restrictions in Washington, D.C.

Perkins+Will's Peter Busby Moves to San Francisco

Peter Busby, Int'l. Assoc. AIA, the managing director of the Vancouver office of Perkins+Will, is moving to San Francisco, where he will serve as the managing director for that office. He is replacing Russ Drinker, AIA, who is taking a position as Perkins+Will regional director for East and Southeast Asia.

As Vancouver's managing director, Busby led such projects as the VanDusen Botanical Garden Visitor Centre, the Center for Interactive Research on Sustainability, and Energy.Environment. Experiential Learning. "Critics have called him Canada's greenest architect," wrote ARCHITECT contributor Edward Keegan, AIA, for a March cover-story feature on Busby's recent work for Perkins+Will.

Susan Gushe will assume the title of managing director at the Vancouver office, according to a press official, but Busby will continue to provide overall design leadership for the Vancouver office.

"A graduate of the University of British Columbia School of Architecture, Busby founded his own firm in Vancouver in 1984 and joined forces with Perkins+Will in 2004," Keegan writes. "His focus has nearly always been green: Busby was mentored by sustainability guru Ray Cole early in his career, and he was one of the founders of the Canada Green Building Council, our neighbor to the north's version of the USGBC."

The March issue also featured a studio-visit profile of the Vancouver office. With an emphasis on higher education, waterfronts, and urban districts—and a mixed portfolio of civic and cultural work, corporate and commercial projects, and science and technology institutions—the San Francisco office neatly matches Vancouver. **KRISTON CAPP**

NCARB Finalizes Internship 2.0

IN APRIL, the National Council of Architectural Registration Boards (NCARB) completed the three-phase rollout of its Intern Development Program 2.0. Among its updates, the previous eight work-experience settings are now recategorized into three groups that distribute the original 5,600 required hours into Practice of Architecture (A), Other Work Settings (O), and Supplemental Experience (S).

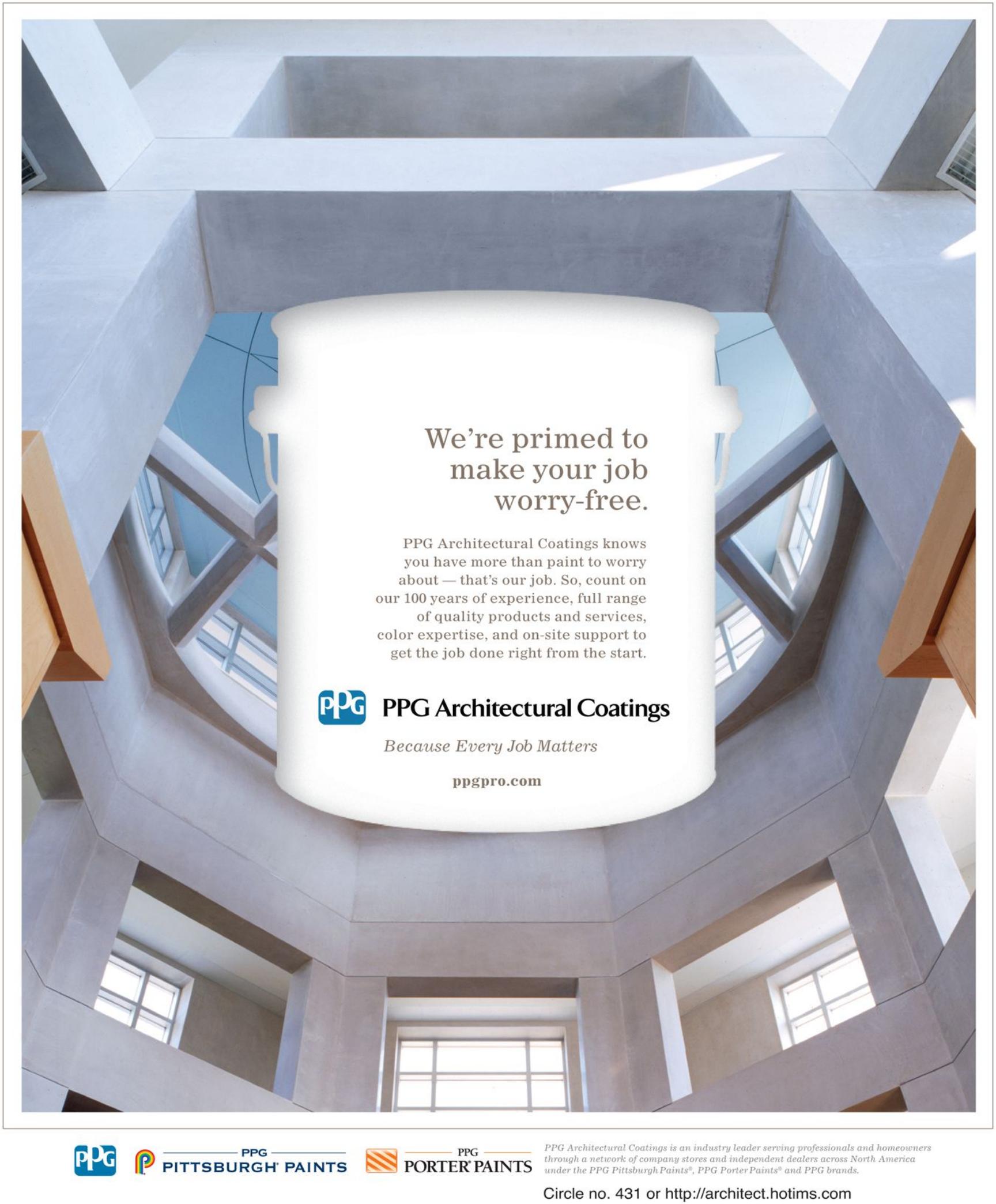
"What we were able to do with this phase is tie it to the actual tasks that were deemed to be required for competent practice upon initial licensure by the profession who did the [Practice Analysis of Architecture] survey back in 2007," says program director Harry Falconer.

The final phase also incorporates four experience categories, in some cases combining or splitting the components of the previous criteria: Pre-Design (260 core minimum hours), Design (2,600 core minimum hours), Project Management (720 core minimum hours), and Practice

(160 core minimum hours). These categories are further divided into 17 experience areas to total a minimum of 3,740 hours. The remaining 1,860 elective hours can be fulfilled by core hours or supplemental experience.

NCARB's program updates also include a revamped online-reporting system and a provision that allows some program supervisors to participate without being licensed in the area where they review and approve experience reports. Interns are now able to receive up to 930 hours of program credit in most experience areas in settings A or O for some academic internships.

According to Falconer, the changes come largely from the 2007 self-audit of the internship program and the demands placed on newly licensed architects. "About seven years ago our board of directors realized the program had not been evolving with ... how we practice architecture today," Falconer says. **HALLIE BUSTA**



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SOURCE: U.S. GREEN BUILDING COUNCIL

→ **NUMBERS**

LEED or Follow

TRACKING THE PROGRESS OF LEED IN TOTAL PROJECTS, SQUARE FOOTAGE, AND NEWS COVERAGE.

TEXT BY KRISTON CAPPIS
ILLUSTRATION BY JAMESON SIMPSON



FROM APRIL 20 THROUGH APRIL 23, 95 LEED-certified projects came online, adding nearly 2.2 million square feet of certified space to the nation's approximately 1.9 billion square feet of certified green space. A module on the U.S. Green Building Council's website allows visitors to track the day-to-day movement in LEED certifications. Over the course of that week this past April, 204 projects earned LEED certification.

The U.S. Green Building Council (USGBC) is good with statistics, a characteristic that has served the organization well. Late in March, the USGBC announced that High Island, Texas's Anahuac National Wildlife Refuge was certified LEED Gold—making it the 12,000th commercial project to earn the distinction of one of the levels of certification.

There's another way to measure the growth of LEED: through the headlines. Since its inception in 1998, LEED's appearance in news stories has grown from a soft buzz to a dull roar. A search of the Lexis-Nexis news database turned up just five results for "LEED-certified" from 1998 through 2000. That number grew by nearly an order of magnitude every two-year period thereafter: 97 results in 2001–02; 600 results in 2003–04; and 1,539 results in 2005–06. By 2008, there are more appearances of "LEED-certified" in news stories than the database can return.

The conversation around LEED is often overstated, but with increased visibility comes increased scrutiny. This is a boon for those who want more certification, as the U.S. Green Building Council prepares to release LEED 2012. □

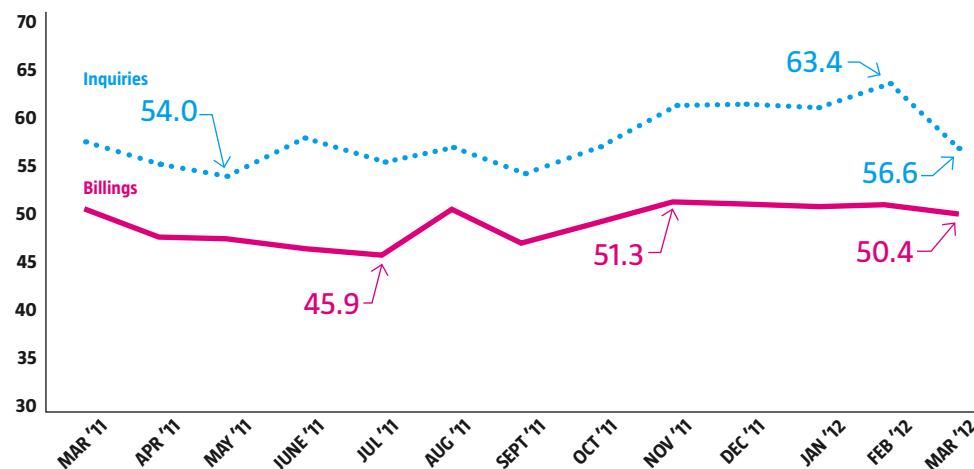
MARCH 2012
ARCHITECTURE BILLINGS INDEX

50.4

- ↑ 56.0 commercial
- ↓ 47.7 institutional
- ↑ 47.2 mixed practice
- ↓ 51.9 multifamily residential

SOURCE: AIA

BILLINGS AND INQUIRIES INDEXES





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On the Boards

TEXT BY DEANE MADSEN



Niagara Falls Gorge Boat Tour pavilion

HELLER MANUS ARCHITECTS

San Francisco-based Heller Manus Architects designed Hornblower Canada Co.'s winning proposal to build new facilities for boat tours at Niagara Falls Gorge, replacing current operations by Maid of the Mist. Located on the Ontario, Canada, side of the falls, the seasonal nature of the site (the falls are frozen for several months of the year) presented the challenge of requiring demountable structures. Heller Manus proposed a removable form-active tensile covering for the entry and waterside embarkation pavilions. "You can go back to the Olympics, Frei Otto, and all those great tents, but those are not ones that you can actually put up and take down," says Clark Manus, FAIA, CEO of Heller Manus and 2011 AIA president. The firm is also considering ways to use existing site infrastructure, including an existing brick building that is being converted into an event center, as "an opportunity for activation" on the grounds, Manus says. Interactive displays and other educational materials will be spread throughout all three structures. Heller Manus's decade-long collaboration with Hornblower has been fruitful, yielding this and three other projects, including facilities at Alcatraz in San Francisco and the Statue of Liberty in New York. "We're always seeking clients who are excited about what they can enrich the experience to be," Manus says. Construction at the Niagara Falls site is set to begin immediately, with an expected opening in Spring 2014.



9000 Wilshire

NMDA

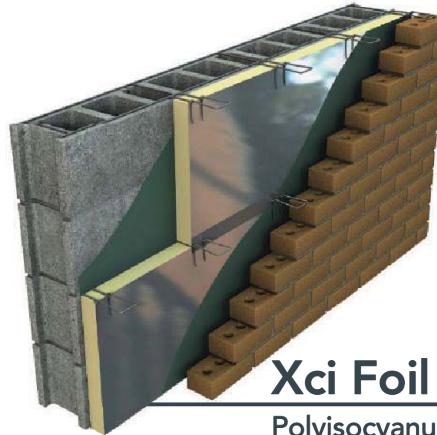
Proving his adeptness with "design at all scales" (his eponymous firm's mantra), Neil M. Denari, AIA, has recently begun design for a three-story office building in Beverly Hills, Calif. The 15,500-square-foot site hosts two floors of offices cantilevering over the first floor's side lobby entrance—which has a shaped exterior soffit that connects to the Wilshire Boulevard front façade. The cantilever results from a volumetric shift of the top two floors of 9000 Wilshire away from the neighboring building; this shift also allows for a small second-floor terrace between the structures. The building is wrapped in alternating bands of black stainless steel and low-iron glazing. NMDA "developed beveled spandrel panels that create stacked-floor 'modules' as a way to subtly, yet effectively, modify the prismatic nature of the building," says Denari, a 2011 AIA Los Angeles Gold Medal winner. Parking, always an issue in L.A., will be accommodated by an automated system occupying three levels below grade. NMDA aims to achieve a minimum of LEED Gold certification, and a 2014 opening.

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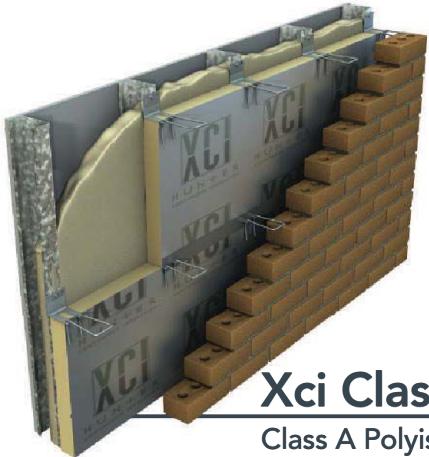
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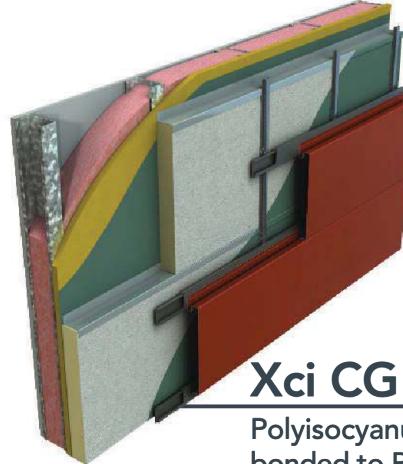
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Sheikh Khalifa Medical City

SKIDMORE, OWINGS & MERRILL

The Sheikh Khalifa Medical City, designed by Skidmore Owings & Merrill (SOM) in a joint venture with ICME and Tilke Engineers & Architects, combines three hospitals into one 3-million-square-foot, 838-bed complex in Abu Dhabi, United Arab Emirates. Shared medical facilities fill a two-story plinth at the base, and bed towers rise from the elevated ground plane of the podium's roof. Design partner Mustafa K. Abadan, FAIA, says that this plane "is conceived as a very large oasis garden." Access to the green space from above and below allows hospital employees, as well as patients (and their guests and extended families) to take advantage of the open-air spaces. But dealing with exterior conditions in the harsh weather of Abu Dhabi presents its own challenges: "One has to be very careful in how one shades these outdoor spaces because the climate is very hot and dry, and sometimes windy," Abadan says. "Therefore, more covered, shaded, and somewhat internalized spaces mediate these climatic issues." To that end, SOM employs orientation-dependent shading devices over the gardens, including fabric scrims with patterns drawn from culturally inspired motifs. SOM anticipates that the project will receive a certified rating within the Estidama guidelines (the Abu Dhabi LEED equivalent). Construction will begin in 2013.

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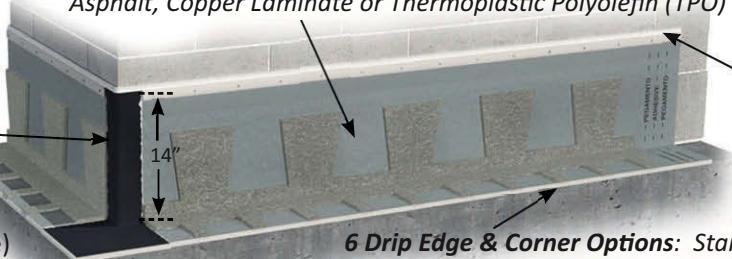
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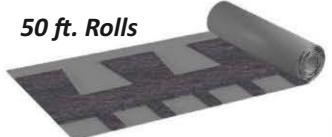
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AIA VOICES

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Janet Bloomberg, AIA, and Richard Loosle-Ortega, RA, piloted their five-person firm KUBE Architecture to prominence by inviting clients to be close partners in the design process. For a Washington, D.C., firm like KUBE, that means a lot of time spent adapting the city's existing fabric. Bloomberg and Loosle-Ortega specialize in transforming the ubiquitous row house to suit more flexible ideas about space. But they also work to expand architecture's audience by making good design available to nontraditional clients.

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It guides our thinking. We've done a lot of row houses in historic areas here in D.C., and oftentimes we can't touch the front façade. Obviously, we want to bring light into these homes, but at the same time, it has to feel like a home. A lot of our process centers on variations of opacity—creating shadow.

Pro bono work is also a real passion of ours—affordable, accessible design. We're working on a series of storefronts down in Southeast D.C., and we've just started a program with the District Architecture Center to connect good design firms in town with D.C. high school students. It's called Design in Action—and this is the pilot year. Seven students spent time at the firms during their spring breaks.

We've also worked with an after-school program called Beacon House—they had a space in the basement of an apartment building

but wanted something more engaging. So they contacted us through the District Architecture Center, and we gave them a whole plan to pursue through in-kind donations and so on.

No matter who the client is, or what the program is, it's about designing the quality of space to support a purpose. And it matters how you interact with the space. Our website has a front end that talks about our work, and a back end called KUBE2 that talks about our process. We sell more of a lifestyle to our clients, rather than just a design. In other words, if the client's first question is, "What's it going to look like?"—that's not really the client for us. Our whole point is that we don't know—we grow the project based on an organic process. It's a process of discovery. The majority of our clients want us to invent something with them. It's always a team effort, we tell them. Our clients very much appreciate our focus on detail and materiality, and we give them an open, modern space that's warm.

More and more, clients are asking for a total concept for the site—for the bigger project. But maybe they can only do a kitchen at first. We do the project in smaller pieces. And we design as much of the house as possible, sometimes including custom furniture. For us, fabricators are part of our extended team. And we treat our clients and our fabricators as partners. —As told to William Richards **AIA**

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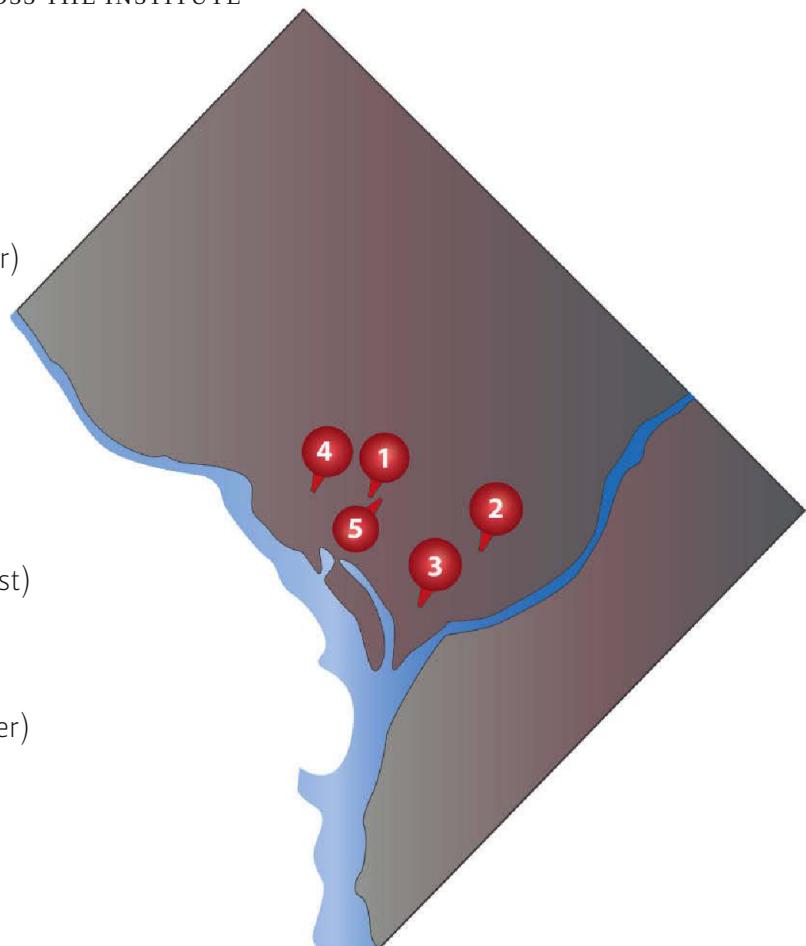
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WASHINGTON, D.C.

Re-Districting

The District Architecture Center (DAC) opened last year as Washington, D.C.'s front line for design advocacy in the public eye. Hickok Cole Architects, selected in a 2009 competition, designed the new space in historic Penn Quarter. The DAC serves as the headquarters of AIA|DC and its partner organization, the Washington Architectural Foundation. Films, exhibitions, lectures, and public outreach—it all happens here.

↗ Learn more at aiadac.com.

WASHINGTON, D.C.

Market to Market

Designed by Adolf Cluss, FAIA, and completed in 1873, Eastern Market is the oldest continuously operating public market in the District. But soon after D.C.-based Quinn Evans Architects completed an ambitious renovation plan in 2007, faulty wiring caused a fire that gutted the building. Quinn Evans used the fire as an opportunity to rethink some elements of the project. Since its rebirth in 2009, Eastern Market has become a central hub for food and fun once again.

↗ To learn more, visit quinnenvans.com or easternmarket-dc.org.

WASHINGTON, D.C.

On the Waterfront

Southwest may be the smallest quadrant of Washington, D.C., but it's the site of one of the area's most ambitious urban-renewal developments of the 1950s and 1960s. Local favorite Charles M. Goodman, FAIA's River Park (completed in 1963) is a masterful experiment of scale and classical motifs in a modern idiom. Underwritten by Reynolds Metals, River Park includes 134 townhouses and a 384-unit high-rise. While Goodman's work can be found throughout the metro region—including Alexandria's lauded Hollin Hills—River Park set a new standard for D.C. Modern that inspired a generation of local architects.

WASHINGTON, D.C.

Burning Down the House

This year marks the 200th anniversary of the beginning of the War of 1812, a war that saw Washington in flames when British troops attacked the city in 1814 and burned, most notably, the White House. President Madison decamped to temporary quarters, now known as the Octagon Museum, where he signed the Treaty of Ghent to end the war. In 1899, the AIA signed a lease for the building (later purchasing it) as a new headquarters. Today, it sits in the forecourt of a complex designed by the Architect's Collaborative, and is home to the AIA, the American Institute of Architecture Students, the Association of Collegiate Schools of Architecture, and the National Architectural Accrediting Board.

↗ To learn more, visit aia.org.

WASHINGTON, D.C.

Night at the Newseum

Here's a newsworthy item: AIA National Convention host chapter AIA|DC will throw the biggest party of the week on Thursday, May 17, at the Newseum. You'll have full run of Polshek Partnership's (now Ennead Architects) 250,000-square-foot building, which includes impressive views of the city from the sixth-floor terrace and interactive exhibitions throughout. The party runs from 7 to 10 p.m. Tickets will be available at the door.

↗ To learn more, visit convention.aia.org.



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PHOTO: DANA HOFF

Urban Charrette connects Tampa and the design community.

SIPPING ICED TEA AND CAFÉ CON LECHE AROUND A WELL-WORN

wooden table, members of the Tampa, Fla.-based design collective Urban Charrette are eager to start their next projects—"demonstration projects," as they put it—which will be designed to draw attention.

For Adam Fritz, Assoc. AIA, Taryn Sabia, Assoc. AIA, Ashly Anderson, JoAnne Fiebe, Matthew Suarez, Evan Johnson, and Kevin Kemp—Urban Charrette's current leadership—the next gig could focus on a fully functioning streetcar loop connecting downtown neighborhoods south to north, east to west. Or streets defined by bicyclists and pedestrians. Or preventing childhood obesity.

"As an organization, we are proactively challenging the community leaders of Tampa to envision how great design can make a positive impact on their lives and create a sense of place in our community," says Kemp, a University of Florida graduate working to obtain his structural engineer's license. "A big part of that is engaging people through education and charrettes, so [that] they are involved in the conversation."

Last year, Urban Charrette obtained nonprofit status and completed a strategic plan. But this year is a year of change: Three of the board's members just completed advanced degrees related to urban design. Some are in new jobs. Others have new babies and new homes. But they are all still trying to establish their foundation in Tampa as a credible community-based organization, along with help from local authorities, developers, planners, and design firms. Recently, Urban Charrette members completed a log of geographic data for the city as part of an ongoing Tampa master plan. Based on existing data, they walked the streets to map trees, parking meters, bicycle lanes, and benches.

Remarkably, they all did it on a volunteer basis. "The solutions and

the process that delivers them," says Fritz, a graduate of the University of South Florida's School of Architecture and Community Design who serves as Urban Charrette's president, "are more important to us than who gets credit for them."

To date, Urban Charrette-led open-mic nights, symposia, as well as educational projects such as Complete Streets, Eco.Lution, and Paint the Town Green have led to small-scale interventions that are starting to have a big effect, ranging from community gardens to music festivals. The group, which numbers a dozen architects, engineers, emerging professionals, and community activists, relies on strategic partnerships to build awareness of Tampa's potential—which centers, largely, on connecting modes of travel.

Notably, the group worked with the Tampa Downtown Partnership on water-taxi terminals and a transit study, in conjunction with the AIA Sustainable Design Assessment Team (SDAT). One element of connectivity in Tampa is its TECO Line Streetcar System, which is viewed as a good, if partial, start. The three-mile line runs in a half-moon shape from the downtown Tampa Convention Center into the city's historic entertainment district, Ybor City—a fairly slim portion of the city. It's a fun ride if time is not an issue, but it doesn't offer much for commuters who want quick and easy transportation around the city to eat lunch or simply jettison their cars.

"Being sustainable isn't just about being green or kind to the environment; it's also about making a sustainable lifestyle," says Sabia, a New Port Richey, Fla., native who has master's degrees from the Rhode Island School of Design in architecture and the Harvard Graduate School of Education. "The pieces are in place. Now we need to foster and bring them together by connecting Tampa. It's that connection that will make Tampa sustainable. —By Diane Egner **AIA**



Joplin's Return

PHOTO: MIKE GULLETT



Rebuilding in a recession's and a tornado's wake.

WITHIN 30 MINUTES AFTER JOPLIN HIGH SCHOOL GRADUATES walked across the stage to receive diplomas on May 22, 2011, a Category 5 tornado descended from the sky.

Joplin is a city of 47,000 people that's an educational and medical hub in the southwestern corner of Missouri, but on that day it also became the site of the second-deadliest tornado in U.S. history.

The tornado ravaged Joplin's infrastructure; upward of 7,600 homes were damaged, including 4,000 with catastrophic losses. Seventy-three apartment buildings were rendered uninhabitable, and at least 530 places of employment were destroyed or heavily damaged. Historic buildings and churches were leveled. The regional technology center, two middle schools, and an elementary school were all razed. In the end, so was Joplin High and the very hallways that had been home to its latest progeny.

Now, one year later, insurance payments are climbing toward \$2 billion and the big box stores are back. The Joplin Area Chamber of Commerce reports 85 percent of all businesses affected by the tornado are up and running again. Yet, even if the city is open for business, empty lots still outnumber new construction projects in residential

areas. Is this simply what recovery looks like for southwest Missouri, or is Joplin losing ground?

Mark Rohr, Joplin's city manager, says that Joplin is on track. Taking care of all of the debris in Joplin had put building efforts on hold, but the massive cleanup of over 3 million cubic yards of residential matter was completed in 68 days in order to meet funding deadlines. The next priority was to open the schools on time on Aug. 17. Only after those tasks were completed could residential rebuilding begin, Rohr says. By February, nine months after the tornado, 55 percent of the homes damaged were under permit for repair or rebuilding.

That represents significant progress. But for Bob Berkebile, FAIA, founder of BNIM in Kansas City, Mo., the finish line is not in sight just yet. Berkebile has assisted with various disaster recoveries since 1993 and works closely with the New Orleans-based Make it Right Foundation, which helps struggling communities rebuild with design and LEED standards in mind.

"Devastation at the level of the Joplin tornado provides a window of opportunity, and this is when AIA's regional and national structure shines," Berkebile says.

With so much structural damage, Joplin was a natural candidate for AIA's Disaster Recovery Assistance Task Force, which—led by state and local AIA chapters—trains and encourages architects in disaster recovery. In the earliest days after a disaster, much of the task



Scenes from a rebirth: In order to meet federal-funding deadlines, Joplin authorities managed to clean up 3 million cubic yards of debris in 68 days. Nine months after the tornado, over half of the damaged homes were under permit for repair or rebuilding.

force's efforts center on building assessments. As the weeks roll on, architects often engage in long-term comprehensive planning.

"I am proud of what AIA as an organization contributed to Joplin," says Michelle Swatek, executive director of AIA St. Louis. "But the real heroes are the Joplin and Springfield architects, especially Brandon Dake, AIA, and Jeffrey Smith, AIA, the president and president-elect of AIA Springfield in Missouri, who selflessly donated countless hours to Joplin." Executive director Dawn Taylor of AIA Kansas City and Missouri AIA president Ryan Warman, AIA, echoed similar sentiments. "Brandon Dake has done yeoman's work connecting AIA to Joplin," Taylor says.

The AIA assisted Joplin in many ways; it offered Dake resources and oversight to keep the region unified and to support Joplin's Citizens Advisory Recovery Team (CART). Erica Rioux Gees, AIA, of AIA Legacy, coordinated relationships between architects and later gathered professionals for the Joplin Charrette. Mike Vieux, AIA, a key player in the recovery for Greensburg, Kan., offered invaluable guidance to Dake and Smith.



Swatek applied for and received a \$5,000 grant for Joplin from the Hanley Wood (which publishes ARCHITECT) and AIA Component Opportunity Fund, which helped fund the charrette, held Oct. 13–14, 2011. Jane Cage, chairman of the Joplin CART, stated that the charrette was of critical importance. "The 60 professionals who donated two 12- to 14-hour days transformed our written goals into a visual form that we could then present to the city council." The city council accepted the CART plan on Jan. 19.

The AIA still has much to offer Joplin. In their book *Walk Out, Walk On*, Margaret Wheatley and Deborah Frieze promote the idea that revisioning with a community helps people "walk out" of limiting beliefs and "walk on" to create healthy and resilient communities. The AIA could help facilitate this process in Joplin, Berkebile thinks. "We have an extraordinary team, and some good can come of this if we help Joplin in walking out of the rubble and walking on to create an extraordinary future." —By Carole Liston **AIA**

↗ Learn more about the AIA's disaster response efforts, visit aia.org/disasterresponse.

AIAPERSPECTIVE

PEOPLE TO PEOPLE



PHOTO: WILLIAM STEWART

A RECENT VISIT TO A LOCAL SUPERMARKET GOT ME TO THINKING about what may be one of the great paradoxes of our times: Despite our having access to more tools than ever to facilitate communication, are we in fact having fewer meaningful interactions with one another and our surroundings?

As I walked the aisles, I was struck by how many shoppers seemed to be talking out loud to themselves, something that normally makes me a bit uneasy. But then I reminded myself to look for the mobile device. Those who were not engaged in loud monologues had cell phones tucked between their heads and shoulders as they loaded their carts as if on autopilot.

Yes, there certainly was a lot of communication going on, but not with other shoppers in the immediate vicinity. Instead, distracted by whatever business they were carrying on outside the walls of the store, people kept accidentally bumping into one another.

How often have we walked into a meeting whose participants sit behind a wall of laptop screens, ostensibly taking notes but more likely scanning emails? Deprived of the subtle feedback from the body language of others and the signals of our environment, are we at risk of being somehow less connected with one another—not despite but because of the many communications tools readily at hand? Are we too often missing what really is being said either by a colleague or by our surroundings?

The annual AIA Convention is your chance to enjoy unique in-person networking opportunities where new connections are made and old friendships rekindled—even though the Convention has been making some virtual inroads on the people-to-people experience. You're no less likely to be friended, linked-in, and tweeted at Convention, but what are these compared to the shared "Aha!" moments over a cup of coffee or the chance encounter with a friend who now practices in Hong Kong?

This physical immediacy is what, to me, gets at the heart of the magic of architecture. Architecture is, after all, the most public of the arts. It's a performance that gathers strength from the constantly shifting real-time dynamic between actors and audience. It's not an experience you can phone in; it's too good and important not to share with others, whether you're at home, in the office, or in casual conversation with a friend as you walk through your neighborhood.

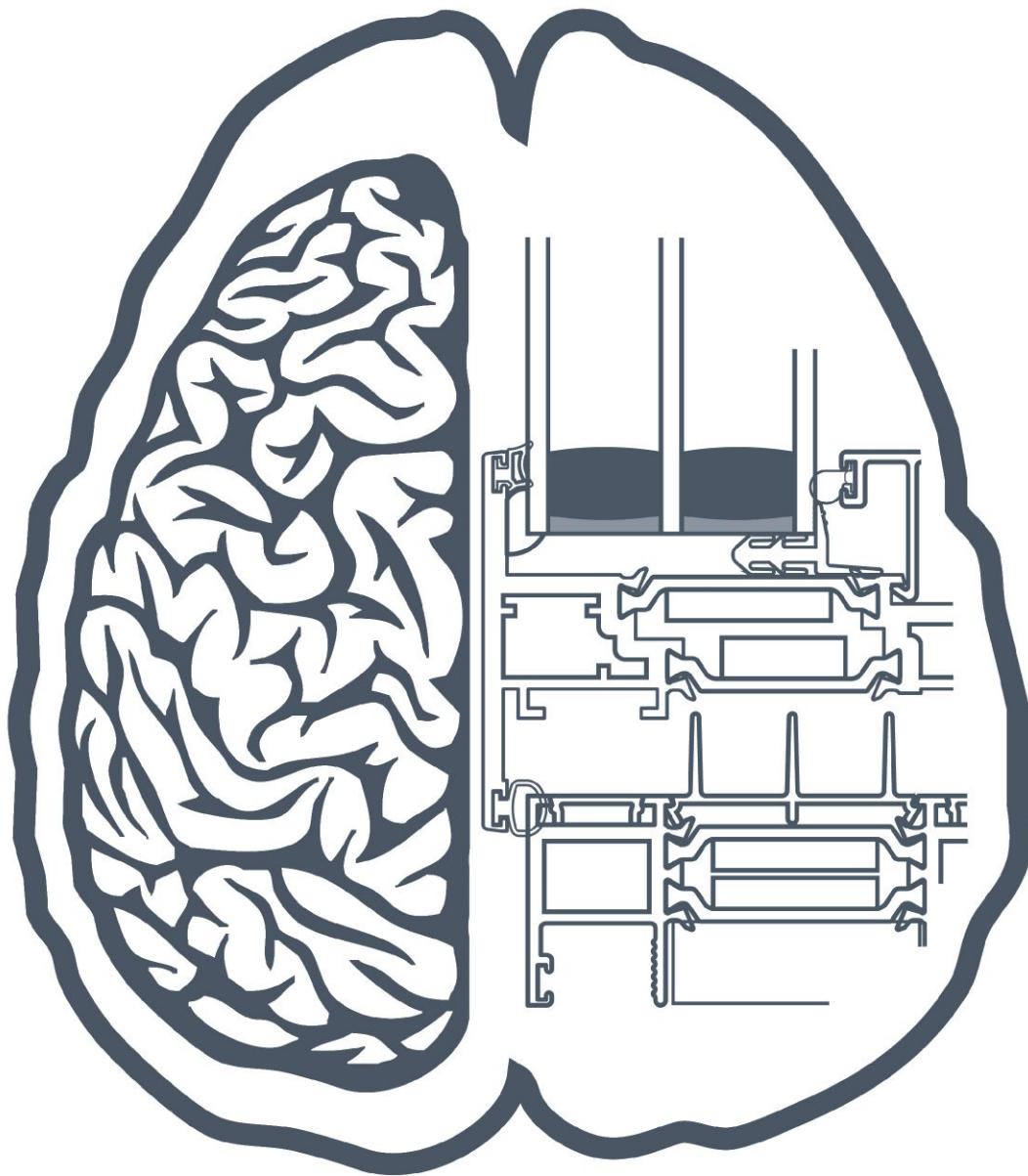
We know the profession and the public are eager for this kind of engagement. How else to explain the growing number and popularity of downtown storefront architecture centers like the District Architecture Center, which opened in Washington, D.C., in time for this year's Convention? The most obvious design feature of the Washington storefront is the expanse of glass. The resulting transparency communicates a welcoming message inviting real-time engagement. The day may come when someone in accounting concludes that a streamed Convention downloaded to wherever you happen to be makes the most sense economically. It could happen.

But while this Convention is up and running, I'm going to enjoy the press of handshakes, the shared laughs, the new and renewed connections, the inevitable disagreements, and the equally inevitable insights that happen when architects get together. I'm going to leave the laptop in my hotel room and meet with colleagues from this country and abroad.

I'll get back to it when its use appropriately facilitates communication. In the meantime, I'm going to be in the moment. Architecture is about people, and nothing quite replaces active engagement with the real thing. **AIA**

Join our conversation at aia.org.

Jeff Potter, FAIA, 2012 President



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EXPLAINS WHAT YOU CAN DO FOR
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GO ABOUT DOING IT.

INTERVIEW BY ERNEST BECK
PHOTO BY NOAH KALINA





SINCE 1995, the U.S. government's Design Excellence Program has promoted good design—and in many cases, cutting-edge design—at courthouses, border stations, and other federal offices. The program—which started at the U.S. General Services Administration (GSA)'s Public Buildings Service (PBS) and recently inspired the U.S. State Department to launch an Overseas Buildings Operations (OBO) initiative for its embassies—manages the selection of designers and design review for buildings that house the federal civilian, domestic, and international workforce. Besides elevating the quality of federal architecture, Design Excellence has also brought substantial work to

"EVEN IF YOU HAVE PREVIOUS EXPERIENCE WORKING ON FEDERAL PROJECTS, YOU ARE NOT PRIVILEGED. WE WORK WITH EMERGING DESIGNERS AND THOSE WHO HAVE NOT HAD ANY FEDERAL COMMISSIONS BEFORE. IN FACT, ARCHITECTS NEW TO THE PROGRAM HAVE BEEN INVOLVED WITH SOME OF OUR MOST NOTABLE BUILDINGS."

architects and other design professionals, from small projects to the new U.S. Embassy in Mexico City. Casey Jones, 45, has served as director of Design Excellence at PBS since 2009 and as director of Design Excellence for OBO since January. He spoke to ARCHITECT about what architects need to know to win federal projects.

Take the initiative.

Architects should be proactive about working for the federal government. Reach out to the agencies you want to work for among the GSA's 11 regions, and speak with the regional architecture chief about projects. Find out what the GSA values in terms of the selection process. Consider this the research phase. "Architects will want to understand the market they are getting into and what the federal client is looking for," Jones says.

Be prepared.

When you pursue a project, make sure you know detailed information about the facility and the site. Be ready to demonstrate that you have dealt with this type of building facility before and that you understand the complexity of the project—and that your experience is matched to the nature of the project. That's important, because competition has increased since the economic downturn, Jones says. "Historically, a GSA project would attract between 30 and 40 firms, but now it is in the range of 60 to 80 firms."

Forget bland.

"We are not afraid of bold design," Jones says. "We've had buildings that are distinguished works of architecture, like Thom Mayne's federal building in San Francisco.

It's a big tent." For the Mexico City embassy project, the first under the Design Excellence Program at State, the short list includes nine firms ranging in size and design practice from Snøhetta to SOM. "What you have to do is convey the commitment of the lead designer and what you bring to the project in terms of the vision," Jones says. "We also look at the designer's capabilities with BIM and of course LEED. We require a minimum of LEED Gold at GSA and LEED Silver at State. You don't have to be LEED certified, but to be competitive, you must be able to deliver LEED."

Knock on the door.

"We are open to everyone," Jones says. "Even if you have previous experience working on federal projects, you are not privileged. We work with emerging designers and those who have not had any federal commissions before. In fact, architects new to the program have been involved with some of our most notable buildings."

Show your strengths.

For most projects, an evaluation committee selects the architecture and engineering team in a two-stage process. The first comprises a review of the lead designer's credentials, including a portfolio of past work, a CV, and a statement of intent. The first round winnows down teams from around 50 firms to three-to-six firms. In the second stage, the firms assemble team members and put together a management plan to execute the project. "At GSA we typically interview the teams at this point," Jones says. "We rank them, based on the strength of the information provided, and the top-ranked firm is asked to submit a proposal."

Go design.

If the project is especially prominent or complex, there may often be a third stage in which some or all of the stage-two firms will be asked to prepare a design submission. Up to this point, the teams are assessed based on the strength of their past performance. For projects that call for a special third stage, firms are given a modest stipend and asked to respond to a specific design assignment. This may be a one-day design exercise or a more considered, monthlong design competition, depending on the scale of the project. The design submissions are typically juried by an independent group of peer professionals who provide technical feedback on their overall quality, Jones says. Their findings are shared with the evaluation board that ultimately identifies the top-ranked team.

You are the nation.

"Whether the project is for GSA or State, always remember that you are representing the United States," Jones says. Courthouses and other federal buildings exemplify the role of the federal government in local communities. Border stations on the Canadian and Mexican borders and embassies reflect our national values to other countries. "These buildings speak to our time," Jones says. "They reflect the values of our current culture both at home and abroad." □

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→TYPOLOGY

Placing Worship

DRAWING FROM AFRICAN, TURKISH, AND SPANISH INFLUENCES, ARCHITECTS ARE PUSHING MOSQUE DESIGN TOWARD THE CONTEMPORARY.

TEXT BY ELIZABETH EVITTS DICKINSON

COMPLETED IN 1991 by Skidmore, Owings & Merrill, the Islamic Cultural Center of New York helped usher in a new era of contemporary mosque design. But follow the backlash by politicians surrounding the proposed Cordoba House in lower Manhattan—dubbed the Ground Zero mosque in the wake of 9/11—and you might conclude that the creation of Islamic centers in the U.S. had been permanently stalled by political posturing. You would, however, be wrong.

In a survey published last year, researcher Ihsan Bagby, an associate professor of Islamic studies at the University of Kentucky, found more than 2,100 total mosques in the U.S., a 74 percent increase over the last

12 years. While some of these were established in existing buildings, about 30 percent of them were designed as purpose-built mosques.

Christopher B. McCoy, AIA, of McCoy Architects in Lexington, Ky., has completed four mosques in the U.S. since 1998, with three more currently in design or under construction. McCoy believes the uptick in mosque architecture is the result of a maturing Islamic-American culture. "Muslims moved to the United States en masse 40 years ago, and architecturally, the first mosques were in adapted or rented structures," McCoy says. "What you are seeing now are groups who have grown out of those first homes as well as a new generation of American-



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Tirana Mosque and Museum of Religious Harmony • *Tirana, Albania* • *Bjarke Ingels Group* • Parts of each of the complex's three buildings will loom over a central public plaza, creating a courtyard for the cultural center.



born Muslims desiring their own purpose-built space."

McCoy is quick to note that his projects are Islamic Centers that include the mosque as a part of a complex, such as the Islamic Center of Elizabethtown, Ky., completed in 2008, a two-story, 13,810-square-foot structure built with a steel frame and concrete brick veneer, and housing multiple functions. The distinction is an important one. The mosque, derived from the Arabic *masjid*, is the place of worship. But since the earliest mosques, the building has also been seen as the center of Islamic life, both sacred and secular. A mosque complex frequently includes ancillary buildings or rooms for scholarship, social functions, and even commerce. "The Islamic Center is more of a hub of cultural and community events containing other elements such as multipurpose rooms and halls, meetings rooms, offices, and gymnasiums," McCoy says.

The mosque itself houses a prayer space oriented towards the Qibla, the direction that faces Mecca. There is a place to remove shoes and to wash in advance of entering the prayer space, and there is separation of men and women congregants. While the mosque typology has readily legible architectural similarities—the dome and the minaret among them—there are no rules within the religion regarding form. "There is no prescription for a mosque in the holy text in the Quran," says Akel Ismail Kahera, associate professor of architecture and community development at the Prairie View A&M University School of Architecture in Texas. Kahera has written a book on the design of mosques

and is one of the few professors in the country to include the mosque typology in his studio curriculum. "It just says that those places should be respected and that the public should have unfettered access."

Historically, the mosque aesthetic has varied dramatically from region to region. The Muslim world extends from Spain and Africa to Asia, resulting in seven distinct regional styles—from open courtyard plans in Spain and North Africa to the pyramidal roof construction of Southeast Asia and the massive central domes of Turkey.

Today, architects are being asked to reference and refine regional mosque architecture with a contemporary audience in mind. The Mosque of Algiers, in Algeria, now under construction, will become one of the largest Islamic centers in the world when it is completed around 2017. Designed by Frankfurt-based KSP Jürgen Engel Architekten and commissioned by the Algerian government, the structure will include a prayer hall, courtyard, cultural center, imam school, forecourt, and minaret, and it will have capacity for up to 120,000 visitors. The minaret will rise 869 feet into the sky, making it the tallest building on the African continent. "It's a major project for the Algerian government and it's supposed to be a landmark for the region's independence and cultural esteem," says Harald Strupp, project manager of the prayer hall and the courtyard. Located near the Bay of Algiers and adjacent to a major highway, the complex will read from the road and the sea and serve as the center of a new urban development.





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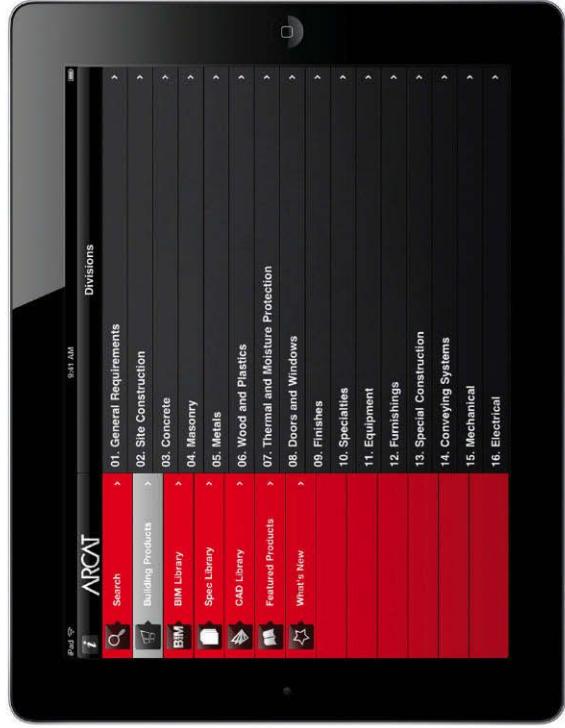
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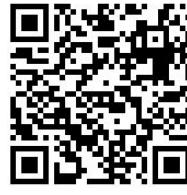
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The Mosque of Algiers • The multilayered façade of the minaret is an ornamental sheath that also protects the glass tower from the sun.



The Mosque of Algiers will be KSP Jürgen Engel Architekten's first mosque; Strupp says the sheer size of it has been the biggest challenge. "The prayer hall alone will hold 35,000," he says.

Within the mosque, the architects employ minimal ornamentation and indirect natural light to help carve out a spatial experience. The exterior will be clad in natural stone and structured by folds, friezes, and decorative entrance portals as well as calligraphy—a classic design element in mosque architecture.

The architects rooted the aesthetic in the North African regional tradition, which was influenced by the great mosque of Cordoba, Spain, begun in 784. "The typical feature in the layout are columns and a succession of naves," Strupp says. "The space is structured by these naves, and arches and pillars dominate the whole space unlike the Turkish mosque, which is one room with the dome as the major feature."

KSP picked up on the traditional form of the column and updated it with a floral leitmotif. These columns are more than decorative, serving as a load-bearing element and containing surface acoustics, ventilation, and drainage. The minaret, historically used for the Islamic call to prayer, has been reinterpreted as a place of public gathering. Built with glass, the slim, tall tower has surprising proportions requiring special engineering for the earthquake-prone area; once completed, it will offer



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business

→ panoramic views of the city. The minaret will house the Museum of Algerian History, and its uppermost floors will be reserved for research areas for scholars.

In countries with a large Muslim diaspora, such as the U.S. and the U.K., congregations are often composed of parishioners from diverse ethnic backgrounds united by their religion. Here, you see Islamic architectural traditions melding with local vernacular. Shahed Saleem is founder and director of London's Makespace Architects, a firm that has designed several mosques with one project currently under construction. In his book *The British Mosque: a Social and Architectural History*, to be published later this year by English Heritage, Saleem writes of how the mosque in Britain has evolved over a 120-year history to create what he calls the Brit-Mosque.

"The British mosque is a teasingly unrestricted archetype: onion-domes and minarets are cultural, not religious," Saleem writes. "A mosque has an exceptionally simple programme. ... This means that every formal and architectural representation of the mosque we see beyond this is a cultural accretion accumulated across time and culture."

For the design of a new mosque in Bethnal Green, in the east end of London, Makespace Architects used the angular geometry of an awkward urban site near a railyard to their benefit. The result is an angular structure that reinterprets the classic Islamic onion dome as a triangular and glazed form. The minaret becomes a series of stacked cubes.

This contemporary evolution of the mosque form is also seen in a spate of recent design competitions for urban projects, including the winning design by Bjarke Ingels Group (BIG) for a mosque complex in the center of Tirana, Albania. Rendered as a massive, perforated structure, it will include an Islamic Center and a Museum of Religious Harmony and is meant to serve the Muslim community while also serving as a symbol for religious tolerance in a city with both Orthodox Christian and Catholic communities. The design reads more as urban starchitecture—BIG, in fact, beat out other starchitects such as Zaha Hadid, FAIA—than a religious compound.

It is perhaps the architectural statement that newly proposed mosques make that causes communities to bristle. Many of the projects in Europe and the U.S., such as the one in lower Manhattan, represent existing congregations looking to expand into new space. The Muslim community was already there, but it is in the commissioning of a purpose-built mosque that the trouble starts. "Mosques are perhaps the most contested building type in the city, provoking debate—sometimes fierce—on issues of identity, social change, race, politics, style, and taste," Saleem says of design in England.

McCoy believes, even with the charged political climate, that it is an exciting time for the architectural commission of mosques. "The religion is a way of life but not an architectural style itself," McCoy says. "Domes and minarets are beautiful architectural symbols, but not Islamic by themselves. Similar to the way Shakers used their faith to guide the manner in which they built, Muslims can expose the inner beauty of a local vernacular in a uniquely Islamic way." □

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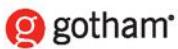
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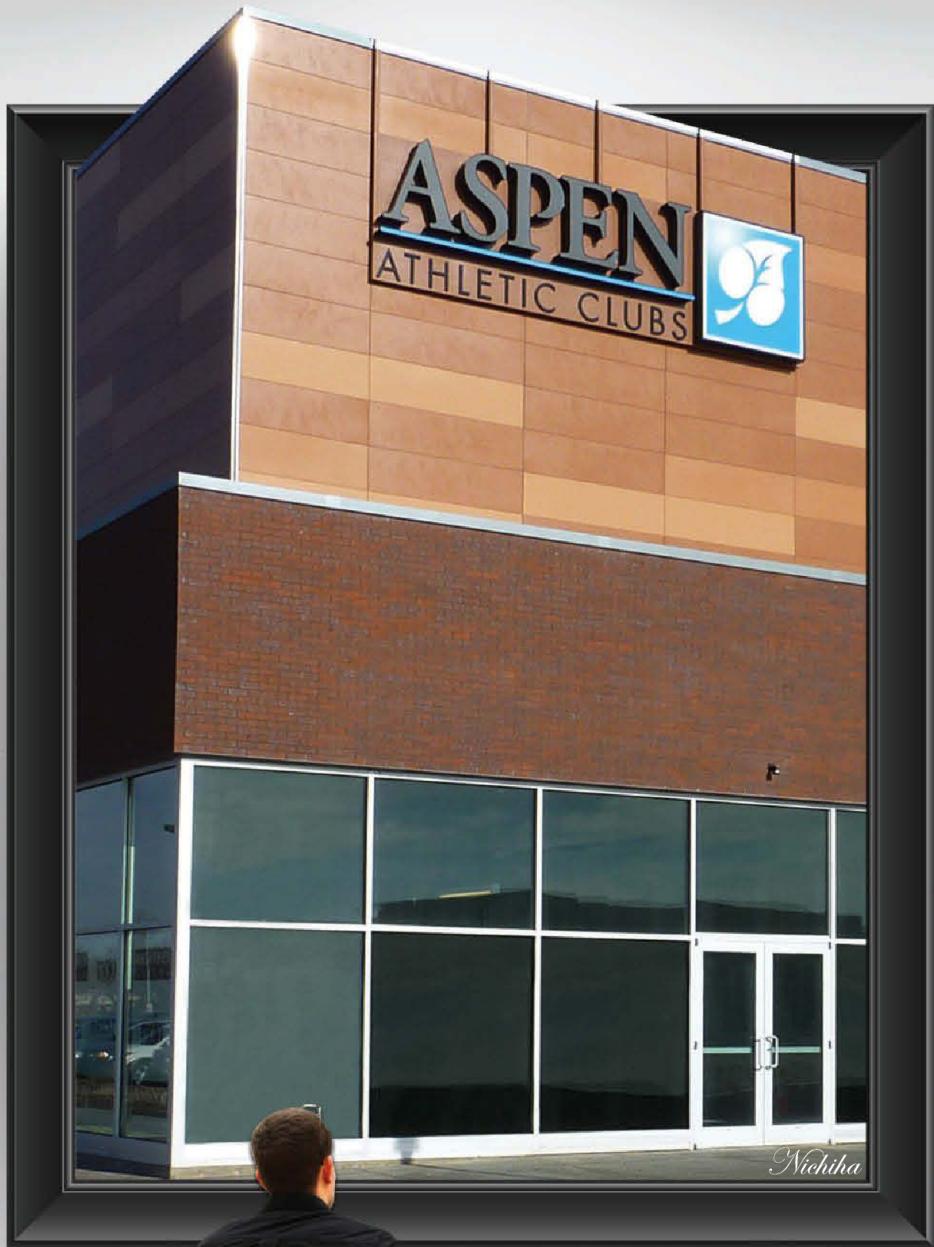
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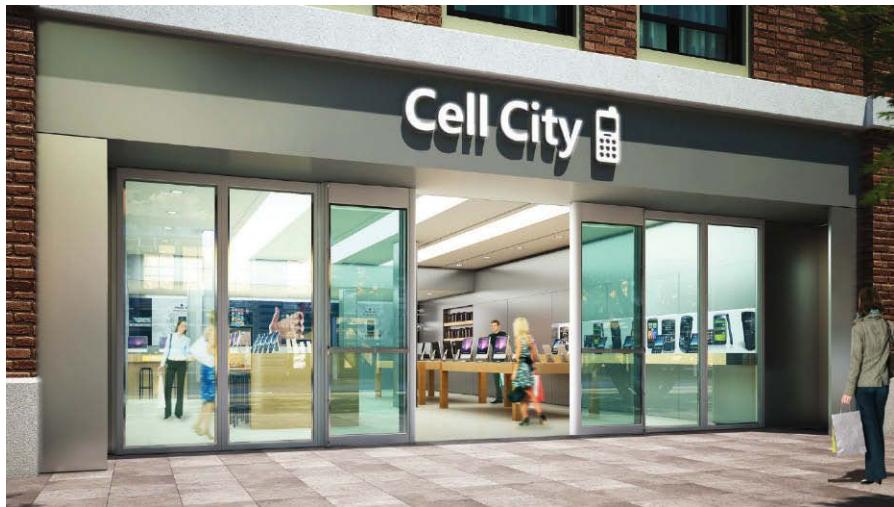
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DISSATISFIED WITH THE FABRICATION OPTIONS AVAILABLE TO HIM, JONAS HAUPTMAN LAUNCHED SEYOND.

TEXT BY JEFFREY LEE
PHOTOGRAPH BY IAN ALLEN



Jonas Hauptman and Seeyond Architectural Solutions combine parametric design with digital fabrication to create interior products.

TEN YEARS AGO, Jonas Hauptman designed a chair with 380 sides. Intended to be a promotional piece for his furniture company, but also an experiment in form and a critique of overconsumption, the chaise was cut and folded from three sheets of cardboard. But when Hauptman set out to gather bids from toolmakers for the dies that could manufacture a small production of the piece, nobody would bid on the project. "They thought it was crazy," Hauptman, 40, says.

While Hauptman's chair never made it past the prototype stage, in many ways it was a precursor to the company he helped form 10 years later. Minneapolis-based Seeyond Architectural Solutions combines parametric design with digital fabrication to offer custom interior features that can be easily designed, individually specified, and reliably manufactured. The company combines Hauptman's enduring interest in

complex folding with the important lessons he learned about the connections between design, computation, and dependable factory manufacturing to make Hauptman and his team innovators in the field of digital fabrication.

Popularized by architectural pioneers such as Frank Gehry, FAIA, digital fabrication is a form-making strategy that allows designers to create special, complex structures out of components designed on a computer and then manufactured with computer-controlled machinery. As more designers began imagining and creating these forms over the last decade, though, Hauptman identified flaws in the process. Architects had to conduct complex engineering analysis—and often use a fair amount of guesswork—to determine



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whether these structures would come together.

Even after architects designed the form, as with Hauptman's folding chair, they found it a challenge to locate a fabricator. "What I felt emerging five or six years ago was that none of these things [designs] were leading to predictable products," Hauptman says. "And I went to look for a manufacturer, and I still didn't see the integration of all the magic that people were making with computation, or any of the kind of predictable quality that would come out of the responsible ownership of that process by a manufacturer."

Seeyond's solution is Tess, a specification tool that allows designers to create a three-dimensional visual model of a unique architectural feature, such as a freestanding wall or a ceiling cloud, by selecting the feature type and modifying its size, form, tessellation, and visual effects. The application then provides feedback on material and manufacturing requirements. Tess employs parametric modeling: When a user makes a change to the design, the tool automatically modifies the relationships between all the variables in the design using a set of rules or parameters.

The company's approach is influenced by Hauptman's partners in Prohject, the consultancy that launched Seeyond in 2011. Hauptman met Walter Zesk, a computational designer who helped develop the math that went into Tess, in a course that Hauptman taught at the Rhode Island School of Design in 2008. His other partner, Paul James, a seasoned product designer with experience at several furnishing brands, helped connect Hauptman with Liberty Diversified International (LDI), a manufacturing conglomerate with an expiring patent on U.S. Mail totes that became Seeyond's corporate owner.

In Seeyond, Hauptman had a new outlet for LDI's corrugated plastics business. Seeyond builds a designer's structure from individual boxes made of sheets of polyethylene or polypropylene cellular resin, which are cut, twisted, folded, and fastened together, using magnets or cables, to make a tessellated structure. Hauptman says that the process is environmentally responsible. The recyclable material can be ground up and re-extruded, so that very little manufacturing waste is produced. And because the structures are self-supporting, no resource-intensive support structure is required. The company is set to launch aluminum composite and solid plastic material options in June.

Connecting material innovation and computation with an approachable interface, Hauptman says, will not just make architects faster and more creative, but also allow them to have more fun. "By giving architects access to these tools, we train the field to keep making beautiful and fun form for the sake of the occupants—but also for the sake of the architect," he says.

The ceiling of the main gaming floor at the Osage Casino in Sand Springs, Okla., for instance, looks like a 3D-movie special effect come to life. Designed in collaboration with Hauptman by Ed Wilms, AIA, client



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leader and senior associate in the Minneapolis office of DLR Group and lead designer for the casino, the ceiling feature has a color-shifting, geometric pattern that curves from an arched dome at one end to a bursting projection at the other. A designer could have made such a structure in the past, Hauptman says, but it would have been time-consuming, expensive, and wasteful, requiring fiberglass or plaster molds. Using Seeyond's technology, the ceiling design was modeled in a matter of hours, manufactured in several weeks, and assembled in four days.

“Because it's so customizable, you're able to create shapes and forms very easily—things that [in the past] may have been only the purview of star architects with enormous budgets,” Wilms says.

After installing the Osage Casino, Wilms is pursuing two more projects. For one, a casino in California, he envisioned a 25-foot-tall, stylized tree form that will grow from a 4-foot radius on the floor to a 20-foot radius on the ceiling, spreading canopy-like over the bar area.

“In the hospitality industry, our clients are always looking for the next, best, and greatest that's going to set them apart from the competition,” Wilms says. Having a portfolio with projects such as the Osage Casino lets clients know he has a creative arsenal to help make their projects unique. “It's up to the designer to be creative and offer something that's different and new. The shapes and the tools that we're using are really liberating.”

For now, Hauptman sees the bulk of his audience as “inspired interior architects.” But he sees applications of the technology for graphic designers, interior designers, and even cartographers. The challenge is creating a common tool that meets the comfort level of designers with different degrees of design skill and computational expertise. While some architecture firms with computational designers would already be well-versed in the basic software, others may just need the ability to change the size of the feature or pick the tessellation. Architects and designers currently use Tess in concert with a Seeyond project consultant.

Hauptman ultimately sees computational modeling spreading far beyond individual architectural features to govern whole buildings, so that the model decides where every brick in a building goes, the size and shape of the brick, and even how the brick is manufactured. As more designers gain access to rapid production methods such as 3D printing, the line that distinguishes prototyping from production will become blurrier, Hauptman says. Companies such as Seeyond, he says, must provide them with tools to elegantly control what they create.

“Instead of just giving somebody a CAD seat and saying, ‘Design with it,’ we're saying, ‘Here's a joystick. It controls this computer screen, which controls the factory out there. Make whatever you want. We're going to help.’” □



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→ LETTERS FROM D.C.

Might Makes Height

SINCE D.C. CAN'T BUILD UP, DOWNTOWN IS BUILDING IN.



TEXT BY SOMMER MATHIS
ILLUSTRATION BY SAM KALDA

YOU'D BE FORGIVEN for stopping to gawk at the construction site for CityCenterDC in downtown Washington, D.C. Not only is the massive, \$700 million development one of the largest construction projects currently under way in any American downtown, it's also one of the deepest. With a below-grade trench of an abyssal 55 feet, building crews have worked like archaeologists since breaking ground last year, digging and digging in search of some elusive, buried treasure.

Bounded by New York Avenue and H Street between 9th and 11th Streets N.W., CityCenterDC will fill nearly 10 acres with six buildings, a park, and a vast public plaza. In its first phase, co-developers Hines Interests of Houston and Archstone of Englewood, Colo., expect to deliver 295,000 square feet of retail, 515,000 square feet of office space, 458 rental apartments, 216 condominium units,

and 1,885 parking spaces. (An additional 110,000 square feet of retail and a 350-room luxury hotel are planned for a second phase.)

The project, planned by Foster + Partners with Gustafson Guthrie Nichol, is prodigious—and in a city with a famous restriction on building heights, its size is very much its virtue. Unlike so many developers whose squat office buildings have filled up the District's downtown, developers Hines and Archstone were able to promise the city, which owns most of the land, that they wouldn't need to squeeze every last bit of square footage out of the parcel to make it profitable. Few, if any, new construction projects in downtown D.C. are able to set aside 20,000 square feet for a plaza, let alone a plaza plus a 29,000-square-foot park.

Hines vice president Howard J. Riker, who is overseeing CityCenterDC for the firm's D.C. offices, is rather diplomatic when he describes the visible effects of the downtown real estate market's "significant supply-side constraint": in other words, the dearth of transit-accessible office and retail space in the central business district.

That a public space-oriented, mixed-use project such as CityCenterDC is such a rarity in Washington's downtown is the result of two quirks of history.

The first is recent and straightforward: The very reason such a large parcel of land was available in such a desirable part of the city is because it used to be the site of the old convention center, which the city demolished in 2004, in anticipation of the opening of the current, larger Walter E. Washington Convention Center just a few blocks up the street. Hines and Archstone were actually awarded the development rights for CityCenterDC back in 2003, but like so many big projects around the country, it was stalled for years by the recession. Archstone was partially owned by failed investment bank Lehman Brothers, which didn't help.

The second reason is older and far more convoluted:

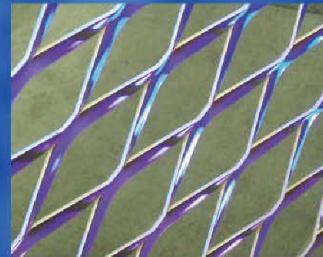
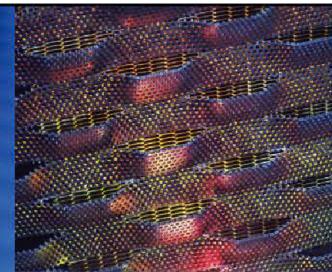
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the 102-year-old Height of Buildings Act, which limits D.C. buildings, with few exceptions, to a maximum height of 130 feet—and in most cases, it's really 90 to 110 feet.

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the country from here, George Washington played the biggest role of any president in shaping the city when he hired Pierre-Charles L'Enfant in 1791 to design it.

The two men would eventually have a falling out, but on the most basic principles they agreed: Washington should be the anti-New York, laid out according to a Baroque plan, heavy on ceremonial spaces and grand radial avenues. To help ensure the city didn't fall prey to the dangerous tenements that were already plaguing New York, Washington decreed that, in the new capital, "the wall of no house be higher than forty feet to the roof."

By the time Thomas Jefferson, who may have loved the Parisian-style design of Washington even more than President Washington himself, moved into the White House in March 1801, the city was still a fairly sleepy place. But as far back as 1791, Jefferson too had been eager to throw his support behind a height limit, "to provide for the extinguishment of fires, and the openness and convenience of the town, by prohibiting houses of excessive height."

But those early edicts didn't set the tone for the capital's boom years. The origins of the Height Act as we know it today can be traced to concerns over the growing city's ability to extinguish fires. Washington, D.C., had become much less sleepy over the intervening century, and it was the 1894 construction of the 160-foot-high, steel-framed Cairo Hotel—set in a rowhouse-lined, residential block of Q Street N.W.—that sparked the initial uproar that led to a permanent law. That turn-of-the-century firehoses could not reach the Cairo's top floors was a main concern. In a classic bit of foreshadowing of the century of development battles that would follow, the Cairo's immediate neighbors were also worried that the comparatively hulking structure would negatively affect their property values.

Contrary to popular myth, Congress tailored the 1910 Height Act so that building heights are linked to street and avenue widths—not in an attempt to protect the Thomas Walter-designed Capitol dome from being overshadowed. But there's good reason why urban legends concerning the Height Act persist: The preservationists who have made it their life's work to keep the act in place benefit from the perception that the law is imbued with a mythic quality.

The main keeper of the Height Act flame is a group called the Committee of 100 on the Federal City, a powerful nonprofit membership organization dedicated to safeguarding "the fundamental values derived from the tradition of the L'Enfant Plan." Over the last several years, the committee, along with its allies on the federal Commission of Fine Arts, has come under fire for the first time since the early 1970s for its doctrinaire interpretation of the Height Act's importance. Urbanists such as the Brookings Institution's Christopher Leinberger argue that the height restriction places an artificial ceiling on density, driving up real estate prices and pushing middle-class residents out to the suburbs.

"What tends to happen is, buildings tend to be pretty boxy; there just isn't an opportunity for a lot of relief,"





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SHARIAH LAW

Although former Mayor Anthony Williams awarded the development rights to CityCenterDC in 2003, the collapse of the lending market delayed its development for years. It wasn't until Qatari Diar, the real estate investment arm of the Persian Gulf state of Qatar, stepped to the plate with a \$620 million equity investment that CityCenterDC got moving.

The Qatari cash was a godsend as far as the District of Columbia was concerned—but it didn't take long before a mini-controversy erupted over what role, if any, God himself might play in leasing decisions as a result. Last summer, *The New York Times* broke the news that Qatari Diar adheres to the restrictions of Shariah, or Islamic law, including prohibitions on charging interest (thus the equity investment, as opposed to a loan). Pundits pounced, raising the specter of creeping Shariah taking over entire city blocks just a stone's throw from the White House. "This is the next level of imposing Islamic law on the secular marketplace," wrote Pamela Geller on the conservative blog *Atlas Shrugs*. "A Shariah compliant mall on taxpayer land."

In reality, an anti-Shariah protest movement would be superfluous to the project. For starters, co-developers Hines and Archstone have had a leasing plan in place since 2006 that works just fine for the Qataris, explains Hines vice president Howard J. Riker. "There are leasing guidelines, but these are consistent with the project's merchandising plans for the retail," Riker says. "No liquor stores or bars without restaurants were planned" before Qatar came on board as a financial partner. The same goes for bank branches, which do little to promote the District's vision for CityCenterDC.

On top of all that, Islamic financing rules have long since adapted to operating in the West. The Qataris won't stand in the way of restaurants serving pork, for example, and there's no restriction on, say, including ATMs. Retailers (including bars) may not sell only alcohol, but patrons may order booze from businesses that also sell food.

With U.S. lenders still playing it safe, Gulf investors such as Qatar are some of the fastest-growing sources of development funding. Without its "Shariah funds," CityCenterDC would still be a parking lot.

SOMMER MATHIS



says CityCenterDC's Riker. But the deal that Riker and his partners struck with the city was structured in such a way that they were able to avoid designing just another set of contiguous boxes. "We mutually came to the decision that a lot of value could be created by including relief, particularly on the interior," he says.

Interior relief is one solution to provide some much-needed variety in the downtown skyline, but relaxing the Height Act to allow even minor modifications would be far more effective. And it appears to be in that spirit that Rep. Darrell Issa (R-Calif.), who chairs the House committee that oversees the District, recently stunned longtime critics and defenders alike by reaching out to local leaders and offering to introduce a bill that would do just that.

It is a testament to the Committee of 100's entrenched influence, however, that the city is not seriously considering any proposals that would suddenly allow a skyscraper to pop up anywhere near downtown. Rep. Issa's proposal is unlikely to

call for anything more than the ability to build an additional story or two in the city center, and, in reality, the CityCenterDC site constitutes the last parcel of available downtown land. If taller buildings ever do dot the landscape of Washington, they'll be erected much farther away, perhaps along New York Avenue or in historically economically disadvantaged Anacostia. So when it's finally completed in late 2013, CityCenterDC stands to debut as a one-of-a-kind, if still abbreviated, new addition to the public space. □



Sommer Mathis is the editor of *The Atlantic Cities*.

If You Build It, They Will Come

D.C. PUT THE RAILS BEFORE THE PLAN FOR ITS STREETCAR SYSTEM.



TEXT BY LYDIA DEPLILIS
ILLUSTRATION BY SAM KALDA

TO THE WASHINGTON OUTSIDER, the streetcar tracks shooting down H Street and onto Benning Road NE—simply truncated at either end—are something of a mystery. Every few blocks, there's a brand-new stop, but no signage to tell you when the next trolley is coming or where it's going. In fact, there are no cars at all—or rather, there are cars on a lot in the Maryland suburbs, where they've been mothballed since 2009.

When then-Mayor Adrian Fenty broke ground on the first stretch of tracks four years ago, he promised that the streetcars would roll starting as early as 2009, which gave business owners on the depressed commercial corridor hope to get them through the unending construction that had been driving customers elsewhere. The street has since been sewn up, but that start date has slipped further and further into the future: first to 2012 and then 2013. Meanwhile,

the city has spent \$53.6 million on the scheme so far, and has budgeted another \$237 million over the next six years—a lot of dough for what currently looks like just a couple rods of steel in the ground.

Now more than ever, cranky councilmembers ask: Why are we paying for this thing again? Buses are so much cheaper!

With nothing to show for four years of work, it's hard to sell the next phase of construction, which will take the tracks through downtown D.C.

This is not a unique problem. Cities around the country are bringing back streetcar lines that they abandoned in the 1960s, when the automobile made them seem quaint. And the lines do take a long time to rebuild: America's streetcar poster child, Portland, Ore., spent 11 years on planning and construction before service finally began in 2001.

Still, it seems like that first leg for D.C.'s line has encountered more than its fair share of hiccups. A couple of the delays are due to factors that no other municipality in America has to deal with: the overlay of fussy regulations found in Capital City.

The District's streetcar vision is larger than most. Unlike cities that have built dinky segments



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that serve small parts of downtown—such as Seattle's South Lake Union line, which trundles 1.3 miles through a once-industrial neighborhood that's now full of tech companies—D.C. is planning a 37-mile network that's supposed to fill in the gaps left by the Metrorail system, trailing development in its wake. A study commissioned by the D.C. Office of Planning estimates that it could spur between \$5 billion and \$8 billion in real-estate development after 10 years in operation.

The Metrorail system, with its 106 miles of heavy rail both above and below ground, was largely planned before D.C. gained a degree of independence from the federal government in 1973, and was almost wholly funded by the federal government. The first tracks in D.C.'s forthcoming streetcar system had none of that. Mayor Fenty started building with the city's own money, without having figured out details such as how the line would connect to Union Station and where substations and a maintenance garage would go. The details would come along the way.

The first thing to go wrong had to do with something you don't think about very much in Washington: There aren't any overhead wires in the downtown core. Federal law prohibits such visual clutter, as a way of protecting historic views toward the Capitol or the White House. But the District's shiny, expensive new streetcars can't run without overhead electrification. Still, the federal National Capital Planning Commission asked the White House to withhold funding for future line extensions unless the city found out a way to do it without overhead wires—at considerable additional expense. Finally, the Council worked a compromise deal, allowing a thin overhead wire on the initial segment and promising to build wirelessly through more formal areas of downtown.

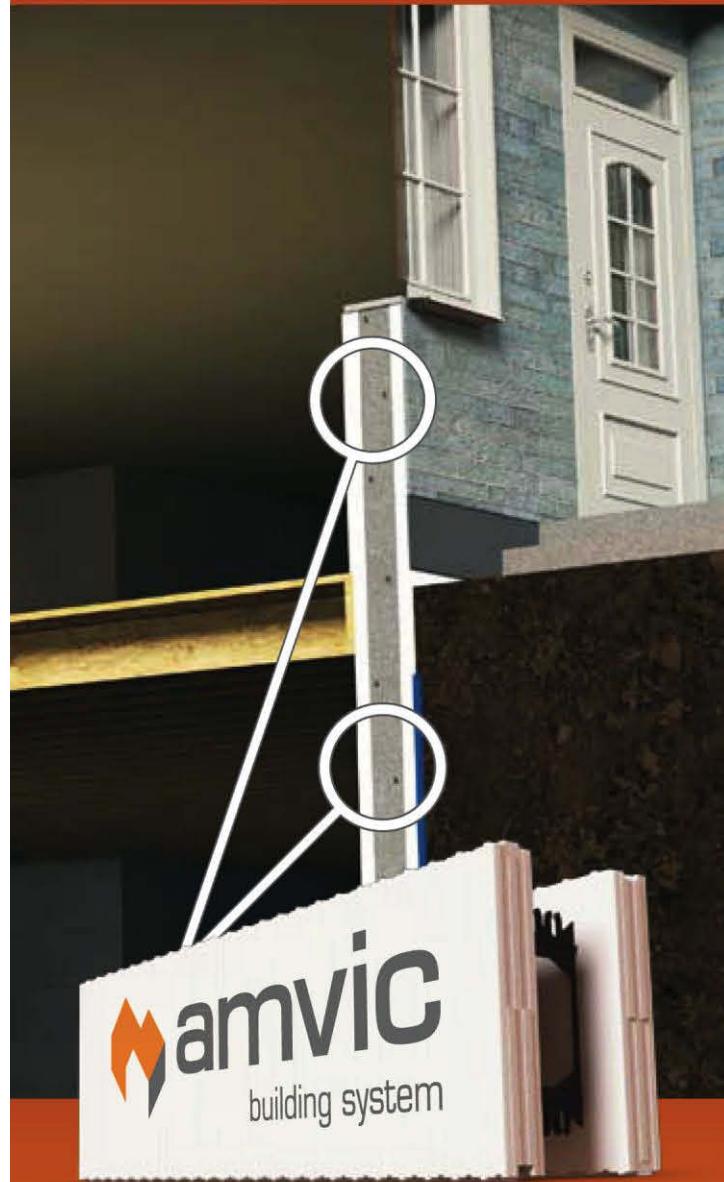
Then came the issue of connecting the H Street line to Union Station—essential for allowing smooth transitions to other forms of transit in and out of the city. All along, the District's Department of Transportation had planned on running the line through an underpass beneath the federally owned station, and building an elevator to the upper level. It was an elegant solution: Even the maintenance facility could fit in the then-unused space. But as plans were nearly finished, Amtrak put its foot down: It wanted to keep the underpass as a staging ground for overhauling its tracks above, and to house the high-speed rail tracks that might get built, when Congress saw fit to appropriate hundreds of millions of dollars for the purpose. The city, rebuffed, had to scramble for another solution.

Finally, the city learned earlier this spring that the Federal Transportation Administration wouldn't let it incorporate streetcar tracks into a bridge to be built over the Anacostia River—a key part of the plan to extend service to the city's most underserved neighborhoods—because they needed to change the kind of rails they were using in order to comply with Buy America requirements. Further, the new plan hadn't gone through enough environmental review to pass muster with the FTA.



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DUPONT UNDERGROUND

While the District works to build a new streetcar system, it is also trying to figure out what to do with remnants of the old one. Reminders of the service that ended in 1962 are just beneath D.C.'s streets: steel rails that need to be ripped out as roads are replaced. But a whole tunnel running parallel to an underpass beneath Dupont Circle poses a special challenge.

The Dupont Underground, as it's known, has seen projects fail before. One team tried to put a food court in the linear space in 1995, but it tanked commercially the same year.

The latest effort, by a coalition of arts groups that secured an exclusive rights agreement with the city in 2010, is such a daunting task as to seem almost impossible. On top of skepticism over past failed attempts, the volunteer organizers face an adverse funding environment, a political establishment more focused on revitalizing depressed areas than affluent Dupont Circle, and preservationists with little tolerance for departures from the historic Circle.

That last bit is tricky. To attract passersby underground, developers and consultants say, the entrances need to be prominent and eye-catching. But the National Park Service may prefer something truer to D.C.'s past. For a recent renovation of a pocket park just off the circle, the agency insisted on replicating the 1929 design, relenting only after community outcry over a dangerously narrow sidewalk.

Leery of raising conservative neighborhood and federal hackles, organizers have been hush-hush about their vision for flashy entrances—which complicates raising the \$30 million necessary to build out the lighting, ventilation systems, elevators, and high-quality finishes. After considering other commercial tenants, the arts coalition has refocused on devoting the entire 75,000-square-foot space to art and architecture—requiring big-time philanthropic support.

At this point, despite beefing up its board with experienced local developers and the consulting firm that worked on Manhattan's High Line, the Underground lacks a real champion in either government or the private sector. Project mastermind and architect Julian Hunt is selling the potential of the space as the thing that will crystallize D.C.'s status as a world-class city.

"Washington's on the cusp of a pretty big change," Hunt says. "This could really put us on the map for architecture. Right now, the city's not on the map." **LYDIA DEPILLIS**



Now, the bridge will be built streetcar-ready—and it will cost millions of dollars more than it might have otherwise to eventually install the tracks.

That last bit could've happened to any city trying to build a transit system using pieces of federal money. But it's also made people ask: Should the city have figured this all out ahead of time? D.C.'s non-voting representative in Congress, Del. Eleanor Holmes Norton (D-D.C.) thinks so.

"The streetcar was built without any planning. There was no plan for where it would go. There was no consultation with Union Station. The mayor at the time said, 'Lay the tracks,' and all of a sudden people saw the tracks, and they thought, 'Wow, that's how you get a streetcar,'" Norton says, with some impatience. "I still believe that the renovated Union Station will accommodate the streetcar. But to do that takes sitting down. That kind of planning goes on for months. You have implicated the entire federal government, because of the monumental core."

Actual streetcars or no, the effect of the tracks on H Street is undeniable. It's become the number-one destination for new bars and restaurants in the city, since the pioneers figured they'd get in early before

real estate values went through the roof. Now, that boom has generated its own gravity: Nobody's even waiting for the streetcar anymore.

And the sunk cost of rails on H Street means that even with all the challenges, there's no going back. The additional complications of federal oversight made that first move all the more important—to "put stakes in the ground," as D.C. Councilmember Mary Cheh puts it. There could have been better planning, she says, but the plan needed to develop its own momentum at the outset.

"I've been thinking about Julius Caesar lately, and there is a tide in the affairs of men," Cheh says, quoting Brutus. "And if you take things at the flood, you're better off." □



Lydia DePillis is the real estate reporter for the *Washington City Paper*.

Not Quite Ready for Some Football

THE UNPOPULARITY OF THE MAYOR'S PITCH FOR A FOOTBALL FACILITY IN THE CITY HINTS AT WHY IT COULD BE MADE TO WORK.



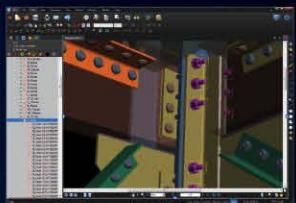
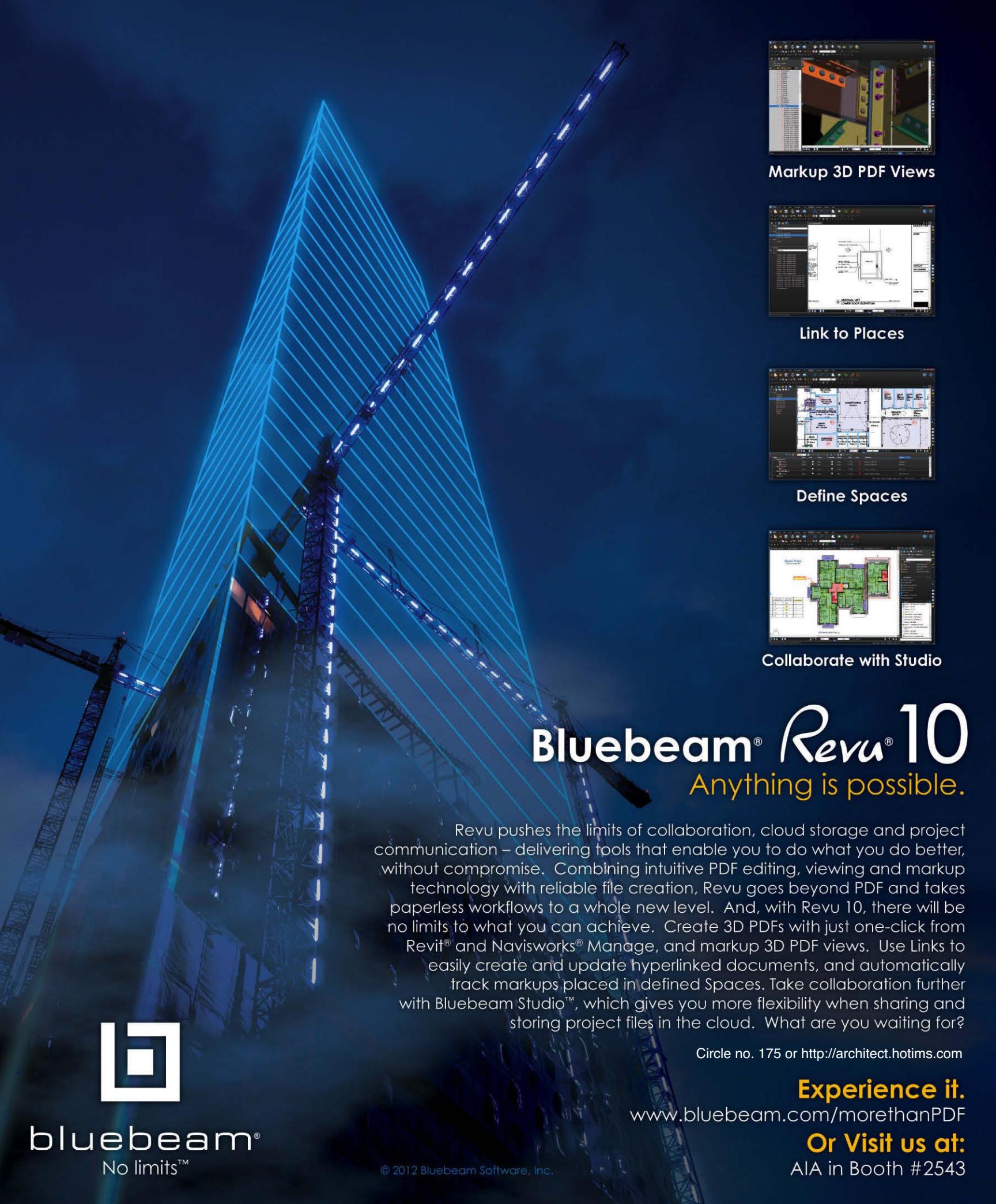
TEXT BY RYAN AVENT
ILLUSTRATION BY SAM KALDA

AS THE GREAT RECESSION recedes and construction cranes once again stride across Washington, the city finds itself confronting the unlikely problem of scarcity. Not so long ago, the city seemed locked in a vicious cycle of depopulation—as middle-class families fled (taking with them a crucial tax base), services worsened, driving still other residents away. Now, amid a long economic boom and a sustained drop in crime, the District is quickly transforming fallow land into homes, offices, and other cultural and entertainment

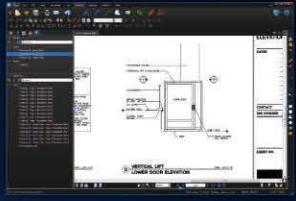
uses. Population is growing again. And large, underdeveloped tracts of land are increasingly rare—and valuable. With luck, this scarcity may prompt the District to think about the limiting nature of its land-use choices: specifically, how dearly the city purchases its low-slung cityscape. Nowhere are these trade-offs more obvious than in the battle over a misbegotten piece of real estate known to the city as Reservation 13.

A sad, 67-acre parcel in the Hill East section of the city, Reservation 13 has long been a place apart from the rest of the city. Pierre-Charles L'Enfant, late 18th-century designer of the plan for the city of Washington, seemed himself unsure what to do with it, ultimately opting to shade in the curious box along the Anacostia River in a manner suggesting a bit of park. Tucked along the west side of that neglected waterfront (but separated from the water by a decrepit sewage plant), the Reservation now stands between





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the old Congressional Cemetery and the crumbling parking lots of RFK Stadium. For over 150 years, it has been home to institutions unwanted elsewhere in the city, such as the Washington Asylum, a hospital for indigent Washingtonians, which first occupied the site in 1846. Today, it houses the defunct D.C. General Hospital, as well as the city jail, STD and substance-abuse clinics, and a homeless shelter. The Reservation's present character could be described as overwhelmingly institutional. The city's street grid ends at its borders, morphing into a series of short roads winding between surface parking lots that surround, at intervals, blank-faced buildings that fairly scream government-use.

In the early 2000s, the city recognized both the looming obsolescence of Reservation 13's building stock and the redevelopment potential granted it by an adjacent Metro station. Metro was proving a catalyst for investment and redevelopment elsewhere in the resurgent city, and both the city and the residents of nearby neighborhoods were interested in seeing the land put to more productive, attractive, and tax-generating use. In 2003, then-Mayor Anthony Williams signed off on a master plan for the land that would extend the street grid and add offices and residences along the newly created city blocks. The Great Recession delayed efforts to find willing developers, but with recovery boosting redevelopment plans elsewhere in the city, hopes ran

high for progress on the site. But late last fall, D.C. Mayor Vincent Gray threw a monkey-wrench into the works.

In November, reports surfaced that Mayor Gray and two D.C. councilmembers had visited Tampa in order to tour the headquarters and practice facilities of the NFL's Tampa Bay Buccaneers. That the Washington Redskins lack a presence in the District has long been a sore spot for some residents; since 1997, the team has played its games in suburban Maryland, and its headquarters and practice fields are near Dulles Airport in Virginia. The Mayor no doubt expected residents to greet the possibility of a relocated headquarters with excitement—not least because the move might lay the groundwork for a return of the games themselves when the existing Maryland stadium lease ends in 2027. Instead, residents fumed. Mayor Gray and his supporters on the D.C. Council spoke at a public forum on the issue in late March, in which they professed that no deal was on the table, but they nonetheless made the case for an effort to recruit the team to Reservation 13. The entreaties fell flat.

The Mayor's flop of a plan might be attributable to fandom or sheer political miscalculation. It may have been rooted in more legitimate worries, however. Reservation 13 has long been home to the sorts of uses that aggressively repel private investment. The Metro



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station is an advantage, but there is little else nearby to attract interest. Mayor Gray may have feared that without the draw of the team, the land would continue to lay fallow. Elsewhere in the city, the plea might have worked. Washingtonians know both the Verizon Center arena and Nationals Park—stadiums perceived as catalyzing the redevelopment of surrounding neighborhoods.

Along Hill East, however, the opportunity cost of an athletic facility is too glaringly obvious. Tampa Bay's headquarters and practice fields take up some 33 acres—or more than half the land available for redevelopment on Reservation 13. Football facilities would do little to "activate" the neighborhood; foot traffic from public events would be smaller and less frequent than might be expected of, for example, a multipurpose indoor arena. The land left over might not permit enough new building to support the community-serving businesses and streetlife nearby that residents so badly want. Given the limited land available for such wholesale redevelopment, the use of such a large portion of Hill East for the deadening presence of a practice structure looks intolerably profligate.

Consciously, in the case of urbanists opposed to the practice facility, or unconsciously, as is likely to be true of nearby residents, opponents are expressing an awareness of the importance of density to urban life. To make Reservation 13 come alive, there must be people there—enough of them to support local businesses such as coffee shops and corner stores. With sufficient critical mass, the neighborhood might support restaurants, bars, and shops, which could then draw residents from other corners of the city. A healthy density helps integrate a neighborhood into the broader city, which then reinforces that neighborhood's local amenities. Were more than half of the parcel dedicated to a relatively stultifying land use, critical density might fall out of reach.

Lurking within this compelling argument, however, is an unjustified assumption. On its own, the use of 33 acres for football need not reduce the parcel's density. Development proposed for the remaining land could simply be made taller. In the 2003 master plan, the city recommends building heights of two stories on the western, neighborhood-facing side of the property, rising to 10 stories on the waterfront side (the property slopes downward toward the water). In practice, the only thing preventing Washington from having its cake and eating it too is a devotion to short buildings.

Indeed, the scarcity of land that has so energized residents to question the mayor's efforts is entirely a product of the District's laws and regulations. The neighborhoods just west of Reservation 13, like much of the city's residential land, are zoned R-4. This allows for matter-of-right development of single-family homes on lots with minimum specified widths and maximum specified heights. If Washington wanted to do so, it could substantially increase the available developable area. A zoning area that doubled the District's population density—essentially creating an entire second city on top of the first—would be achievable without so much as questioning the city's statutory height



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ROBERT F. KENNEDY MEMORIAL STADIUM

Although D.C. residents seem rather uninterested in bringing their Washington Redskins back within the city, the idea remains perennially popular among grandstanding politicians. Whether or not current Mayor Vincent Gray lands the Redskins' headquarters and practice facilities at Reservation 13, its neighboring site—currently the home of decaying RFK stadium—would be the likeliest location for any new football stadium. Residents, however, want more of a real neighborhood feel in the area. Could a new stadium plan satisfy everyone?

Dennis Wellner, AIA, a senior principal at Populous who specializes in football stadium design, says that several key considerations loom large. Size and fit are chief among them; at least 20 acres are likely to be necessary for the stadium itself. The RFK stadium site occupies about 190 acres of land, 30 of which are now home to the stadium structure—so fit shouldn't be a problem. Neither should land-use rules; the land is federally owned and leased to the District for "stadium use only." A mixed-use stadium development should fit the bill.

Infrastructure will also prove critical. Football stadiums seat over 60,000 fans—considerably more than baseball parks or basketball arenas. Parking will crowd out other uses on the site. RFK is currently served by a Metro station and will enjoy a stop on the city's new streetcar line. Private office construction would no doubt include some parking, helping to keep additional parking needs at a minimum.

The goal for the buildings themselves should be a "place where people want to be and go," Wellner says. For example, Patriot Place, the Foxborough, Mass., home of the New England Patriots' Gillette Stadium, includes an open-air shopping mall that is home to such mall stalwarts (mallwarts?) as Bed Bath & Beyond, Old Navy, and an Olive Garden. But the development is squarely in a suburban mold.

A proposed stadium in Los Angeles could prove slightly more urban. Located at the edge of downtown, the hypothetical structure would be located alongside the Staples Center and the L.A. Convention Center. While primarily designed for the automobile at the moment, the site could be reoriented toward a nearby transit station and the downtown grid, given determined leadership.

Ultimately, Wellner says, leadership is what matters. The surrounding development must be pursued with the same enthusiasm as the stadium itself, he says. The city must focus on a business model that supports the project's financial goals as well as a commitment to permit a mix of uses sufficient to energize the neighborhood—a challenge, given that the Redskins may play just eight home games a year. In a city with as many development constraints as Washington has, there would be little margin for error. **RYAN AVENT**



limit—and leaving the District at less than a third of the population density of Manhattan.

The city may have its reasons for preferring short buildings. And it may not feel that accommodating both football and a community in a neglected part of the city justifies a change to its development rules. What the battle over Reservation 13 makes clear, however, is that Washington's height aversion crowds out attractive amenities—a football facility in this case; parks or museums in others; willing would-be residents, artists, entrepreneurs, and taxpayers in many, many others. It has a substantial cost, in other words. That has always been true, but perhaps it takes a tone-deaf football fan of a mayor to make the point clear to all. □



Ryan Avent is the economics correspondent for *The Economist* and the author of *The Gated City*.

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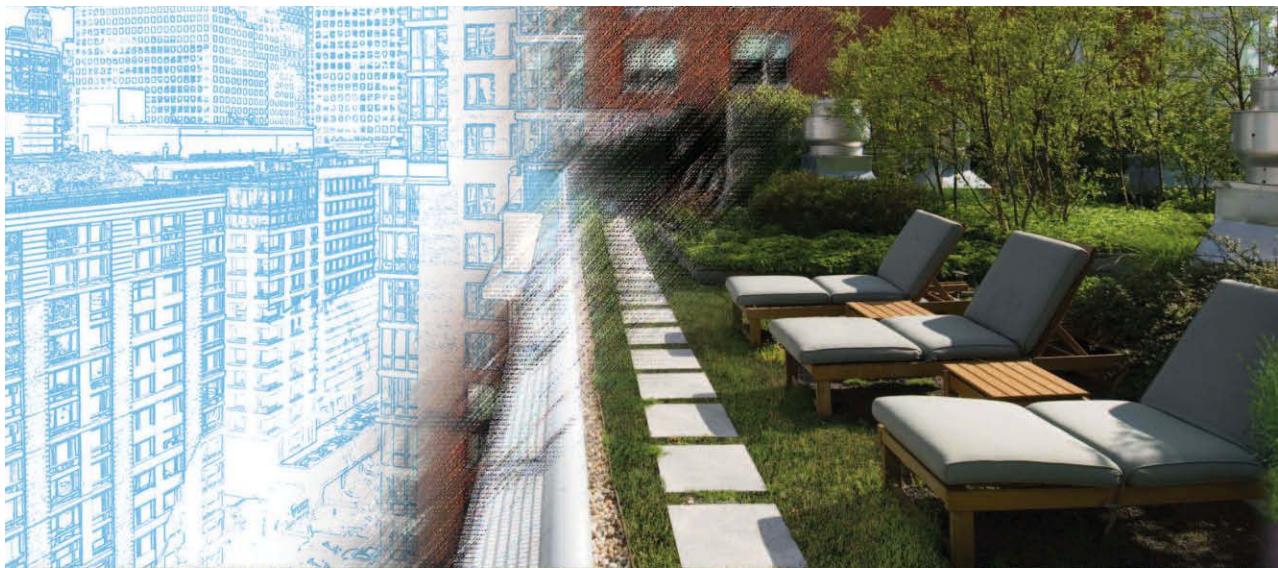
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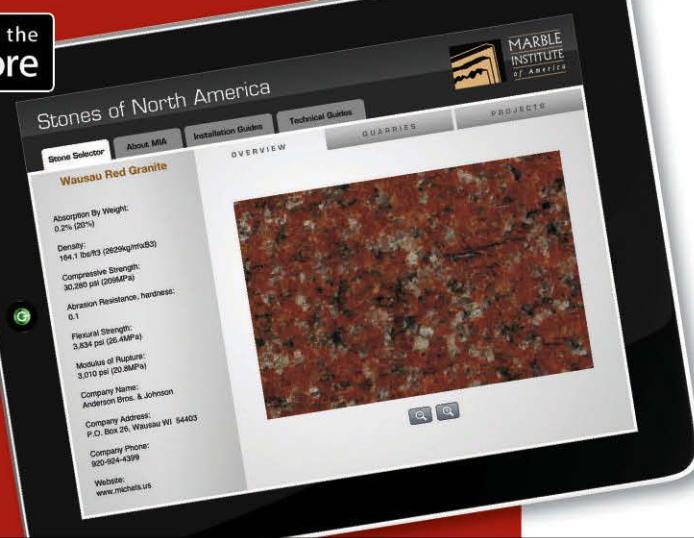


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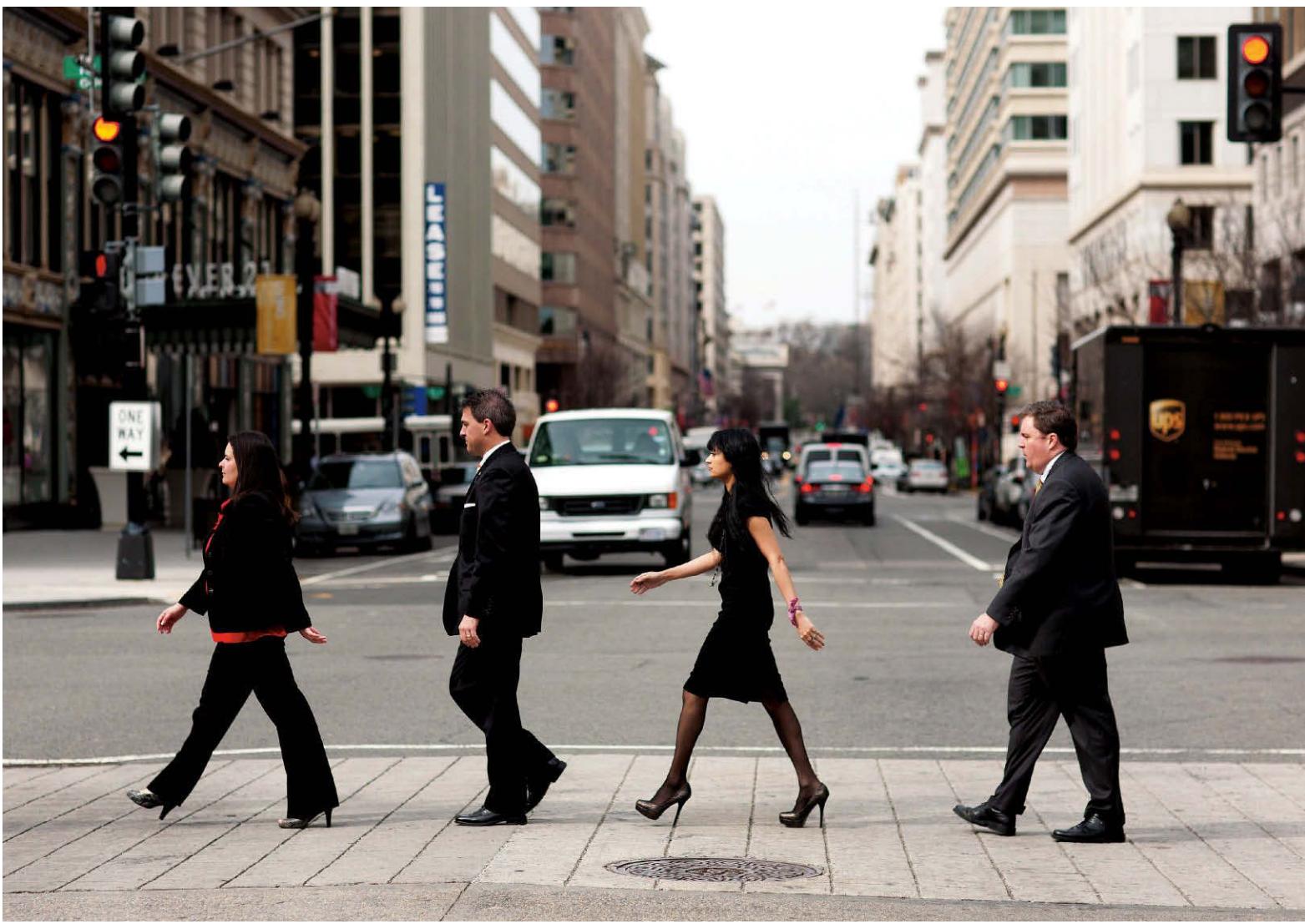
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→ CAREERS

Come Together

THE YOUNG ARCHITECTS FORUM TURNS 20.



From left: Jennifer Workman, AIA; Adam W. Palmer, AIA; Deepika Padam, AIA; Bradley Benjamin, AIA

TEXT BY AMANDA KOLSON HURLEY
PHOTO BY ELI KAPLAN

DOES A STUDIO-BASED EDUCATION make architects specially enthusiastic workshoppers? The scene at the District Architecture Center on day one of YAF Summit20—a national summit of the AIA Young Architects Forum, held in Washington, D.C., in March—would suggest so. Sixty-odd participants had broken into six groups, each one charged with discussing and refining a key goal for young architects that had been identified by voting earlier that day. Almost everyone had opinions about his or her designated topic and wasn't shy to voice them.

At the Starting Your Own Firm table, one architect said that he'd calculated that he'd need to gross about

\$2,000 per day as a sole practitioner just to support his family. Another observed that more-senior architects probably don't want the AIA to teach leadership skills, because "in a boss's eyes, it's teaching employees to leave." Conversation at the Value of Licensure table grew lively when someone brought up the issue of public awareness. No one understands what architects do, several people complained; even on job sites or working with engineers, it can be a problem.

In their daily lives, individuals will often need to hire a lawyer or an accountant, but rarely an architect,

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IN THE HARSHER LIGHT OF 2012, MANY ARCHITECTS ARE STRUGGLING TO SIMPLY FIND THE LADDER. EXPECTATIONS HAVE CHANGED: MENTORSHIP, NEVER A GIVEN, IS NOW A PERK OF THE FORTUNATE.

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noted one participant.

The Young Architects Forum (YAF) was created in 1991 to help emerging designers network with each other and grow professionally, and also to serve as a collective voice for architects who've been licensed for 10 or fewer years. (Don't be fooled by the group's name—age is not a factor for inclusion, only tenure in the profession.)

Thanks to this broad definition of "young," the YAF represents 28 percent of total AIA membership and 40 percent of all architect members. That may seem like a critical mass. So why does such a large group need special representation, its own voice within the Institute?

According to its handbook, the YAF exists to address issues that are "uniquely relevant to young architects and specifically relate to the development stage of their professional careers." Within the AIA and the profession as a whole, discussion of these early-career issues may get squeezed by would-be architects' hurdles en route to licensure on the one hand, and established professionals' direct design and practice-management concerns on the other.

Modeled on the structure of the College of Fellows, the YAF is led by an "AdCom" (advisory committee) of seven young architects, plus 18 regional liaisons: a liaison each to the AIA Board of Directors and the College of Fellows Executive Committee; the AIA's Emerging Professionals director; and the forum's past chair. Active local and regional YAF groups around the country organize social events, seminars, and the like. At the national level, the YAF publishes a bimonthly Web magazine, *Connection*; holds an annual Ideas Competition in collaboration with the AIA's Committee on Design; and provides resources on mentoring, leadership, and other topics.

Five years ago, the YAF held its 15th-anniversary summit in Washington. Beforehand, it surveyed members about its priorities, which were narrowed down to 10. The six most urgent were mentorship; human capital; leadership and interaction skills; practice management; credibility of the architect; and responsibility of the architect.

This year, by contrast, the top six to emerge are advancement of the profession; career advancement; value of design; starting your own firm; value of licensure; and economy and change.

Deepika Padam, AIA, a senior designer and project manager at San Francisco's Heller Manus Architects who serves as the YAF's communications adviser and editor in chief, says she was surprised that 2007's three leading issues—mentorship, human capital, and leadership and



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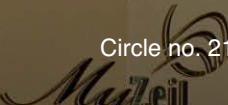
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interaction skills—are absent from 2012's top six. And globalization, "a big deal in today's market," is missing.

"We were completely surprised," says Jennifer Workman, AIA, the YAF's current chair and a project leader at Good, Fulton & Farrell in Dallas. However, she added, the AIA's Board of Directors sees parallels between the shift of focus within the YAF and changing priorities within the AIA as a whole.

One way to interpret the shift? In 2007's hot economy, young architects were climbing the ladder at their firm, or hoping to; or they were keeping an eye out for better jobs. There was more work than they could handle (in the 2007 YAF survey, 22 percent of respondents cited "work overload" as their main professional challenge). Everyone was so busy with continuous project work at firms that mentorship, professional development (i.e., "human capital"), and management skills got pushed to the side.

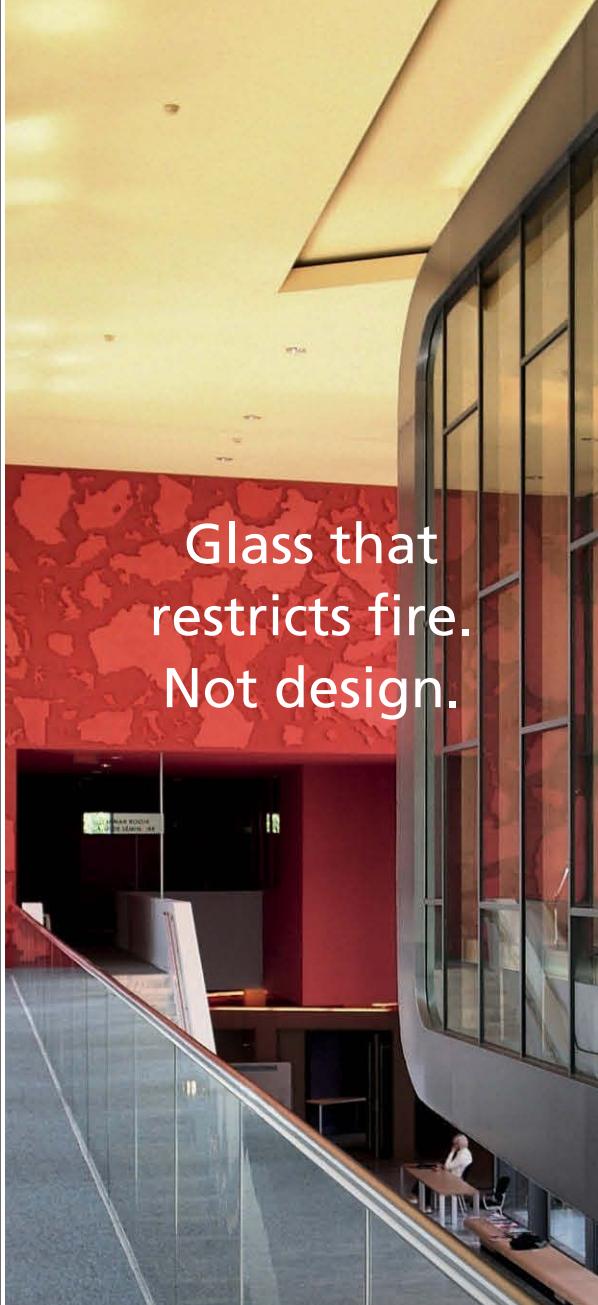
CLEARLY, MOST YOUNG ARCHITECTS TODAY ARE NOT COUNTING ON A LINEAR, TRADITIONAL CAREER TRAJECTORY. THAT MIGHT EXPLAIN WHY THEY'D PREFER TO TAKE THEIR CAREERS IN THEIR OWN HANDS.

Now, in the harsher light of 2012, many architects are struggling to simply find the ladder. Expectations have changed: Mentorship, never a given, is now a perk of the fortunate. And with opportunities scarce, you might as well create your own (hence the interest in going solo).

When asked, "Do you see yourself practicing architecture in the same manner throughout your professional career?", only 34 percent of respondents in the YAF's 2012 survey answered "yes." Clearly, most young architects today are not counting on a linear, traditional career trajectory. That might explain why they'd prefer to take their careers into their own hands. The more highly the public values design, and the designer's skill set, the larger the potential client pool—especially if it can include nontraditional clients.

Bradley Benjamin, AIA, the YAF's vice chair and principal of Radium Architecture in South Carolina, says that his initial surprise at the five-year shift abated somewhat when he thought more about the categories and how much they overlap. "Mentoring is something that you can integrate into a lot of ... [the 2012 priorities]," he says, especially career advancement and starting your own firm—which depend on the guidance of mentors.

Attendees at the summit were diverse, with an almost 50-50 split between men and women and many people of color. They included educators and unlicensed designers as well as people with no AIA



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affiliation whatsoever (the latter made up only about 20 percent of the total). But the diversity didn't stretch to employment status: Only one participant was out of work. By and large, these aren't the people who are struggling to break into architecture," Padam says. "We should be thinking about ... [people leaving architecture], but it did not end up on the board," she says. "I guess that's because this group are more the leaders, and very involved. They are not even thinking about leaving the profession."

Padam was heartened by the strong interest in advancing and valuing architectural design. "We have been discussing how architects need to be the go-to resource in our communities, as the people ... [others] approach when they want to build something, change something, modify something," she says. "People have stopped going to architects. They need to come back to us."

Over the two-day summit, attendees heard presentations on the future of the profession by Lawrence W. Speck, FAIA; HOK's organizational development guru Marsha Littell; and ARCHITECT's own editor-in-chief, Ned Cramer, Assoc. AIA. They also attended events at Grassroots, the AIA's annual advocacy conference, which was held at the same time. They will continue to talk in their six working groups via conference calls, and the next step is to create action plans addressing the top priorities.

The plans will need time to develop, but Workman and her fellow YAF leaders already have a few ideas. Tabs on Talent is one: a database with young architects' résumés that employers and clients can search when an opportunity arises. Open Door Policy would be a series of networking events hosted by firms, whether they have current openings or not. Benjamin's working group hopes to create a clearinghouse of Web resources for starting your own firm.

The young architects in Washington that week did take one immediate action: opening their wallets. They were shocked when they learned that only 1.5 percent of AIA members donated money to the organization's ArchiPAC political action committee last year. "Before the summit ended," Workman noted proudly, "100 percent made a donation to the PAC." □



S.J.M. Architects; Photo by Paul Mullins

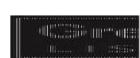
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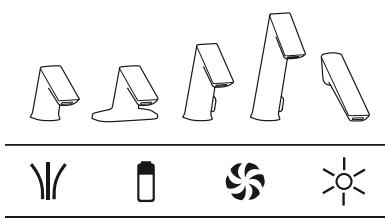
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Erinn McGurn founded ScaleAfrica after she and her husband decided to build a new school building in Zambia for a community in need.

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TEXT BY LINDSEY M. ROBERTS

PHOTO BY NOAH KALINA

ALTRUISM OFTEN REQUIRES a dose of pragmatism. You can't help those in need without a revenue stream or solid business plan. Erinn McGurn, AIA, wanted to pursue pro bono work after she graduated from architecture school at the University of Texas at Austin in 1998, but first she needed to build her portfolio and resources. She followed the normal course of interning, working for established firms, and moving up the ladder. Then in 2007, when the timing and finances made sense, she founded the New York-based nonprofit ScaleAfrica, dedicated to building schools in rural sub-Saharan Africa. Three years later, she quit her job at Robert Frear Architects in New York to run ScaleAfrica full-time. That same year, she also launched her own firm, ScaleStudio, to supplement her nonprofit work with for-profit projects.

"We're trying to create a model for working so that pro bono work doesn't become a total drain on your practice," McGurn, 39, says. "Sometimes, there's an expectation that you'll give away your services. So we think of ScaleAfrica and ScaleStudio as a hybrid

organization that is more like a social enterprise than a strictly for-profit or pro bono practice."

The firms currently share an office, one full-time staff member besides McGurn, and two interns who work for ScaleStudio about 10 hours a week. To date, ScaleAfrica has built a school building, library, and teacher housing for Chiutika Basic School in Zambia. Buildings for another Zambian school complex are in the works. "I spent 15 years catering to wants, only to realize my skills are best spent on needs," she says. ARCHITECT talked to McGurn to find out how she developed her philanthropic business plan.

Why did you focus your nonprofit on Africa?

My husband [Guy Baron] was born in Zimbabwe, and we visited schools and villages in Zambia in 2006 to have a deeper understanding of southern Africa—not with the intention to act, but just to experience things. After going to Africa a lot, it's hard to be shocked by the things that you see, but we went to this school that had 1,000 children....



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[It was] this dark building with holes in the roof, and the children were sitting on the floor or on bricks. The teacher was writing with chalk on a stucco wall.

What struck me was how eager the kids were to learn. There was a disconnect between where they were learning and what they were excited about. I asked the head teacher if there was anything that we could do to help. He said, "We really need a library." I thought he was asking us to build a building, but he was asking us to get him a dictionary. So I started sending them books.

How did books turn into a building?

In early 2007, there was flooding in Africa, and the roof on that old school building peeled off in one piece. Once we made the mental leap that we were going to do something physical, we thought, "Let's set this up properly, and raise money." Then we got government approval in August to build a new four-classroom block. I was working in New York, doing a lot of expensive projects, and I mustered the courage to leave my job.

What was the process for getting Zambia's OK to build?

When we came to them with the idea to put up a building, we had to go to the local government official—but also to the chief. His word is final. These [the Zambians] are educated people, and they have really good intentions for their communities. The chief begrudgingly said that we could work in his area. But when we went back [after the project], we were greeted as friends.

How do you continue to ensure that the buildings are being used as intended, from so far away?

Like any good client relationship, you respect your clients because you're building for *them*. The implied deal we struck [with the government officials] is that as we put up more classrooms, they will fill those classrooms with dedicated teachers. At Chiutika, there were four classrooms, nine teachers, and 1,000 students. Now there are 13 classrooms, 13 teachers, and 1,600 students. They've met our agreement.

A nonprofit came out of that experience. Where does it get its funding today?

For ScaleAfrica, we raise all of our money from private donors—no grants. We've chosen that path because then you're developing personal relationships with people. In a few years, we've seen some nice growth. People who gave us \$50 are now giving \$500 because they see buildings. That's the great thing about buildings; they're tangible.

And how does the relationship between the nonprofit and the for-profit work financially?

ScaleStudio is a revenue-generating model. Ten percent of our time is spent on pro bono projects for nonprofits. Private clients are billed at market rate. A significant portion of ScaleStudio profits, not revenue, are donated to ScaleAfrica. In the future, some ScaleStudio profits will be invested in social-investment funds that support technologies we use, like water filtration, solar collection, alternative-energy technologies, etc., to provide small returns to benefit ScaleAfrica. Each [firm] is dependent



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Chiutika Basic School in Zambia.

upon the other in either a financial or shared knowledge and experience sense. What we make from ScaleStudio benefits ScaleAfrica. What we learn from our ScaleAfrica building projects and community engagements informs how we approach the design of ScaleStudio projects. It's qualitative and quantitative.

Many firms donate 1 percent of their time. You donate 10. How do you make a living?

It doesn't bankrupt me for a few reasons: There is so much overlap of knowledge, research, design detail in what each entity does that it's not twice as much work. The extra work comes in the different forms of taxation and the separation that must remain between the two. I roughly split my time between the two, but what I pay myself through ScaleStudio is well, well below what I was making in my last position.

Compensation and traditional benefits in the office are below market rate, but certainly livable. ScaleStudio is not even two years old; it's a toddler. The longer-term goal is to be able to pay employees market-rate salaries by scaling [up] and having a higher volume of projects, so that these public-interest design projects can generate both real and social capital in a sustainable way for everybody involved. Taking on this kind of practice shouldn't mean low compensation. It's a growing pain, part of starting small.

Why is it important to you to create a new prototype?

There's a whole generation of architects interested in this kind of work; they're starting out their careers looking for this, as opposed to me starting backwards. We need to figure out a way that we can do work that has social value and doesn't bankrupt us. There's a groundswell for doing pro bono work; it's altruistic, but in the long term, we need to be smarter business people. I think we owe it to all of the students to help them find a sustainable living.

There's a sector of the population that needs design services more than they ever have. And there are also more architects than ever who want to do this kind of work. We need to find a way to organize ourselves.

Where is ScaleAfrica going next? How big will it get?

We'd like to shift our funding model to include grants and philanthropic dollars from foundations. We're also going to place a design fellow from Harvard on the ground, to search out the need [for architectural services] in the broader area. We want to scale up immensely, but slowly, so as to not go charging around Zambia.

We're constantly trying to learn and absorb info. Our five-year plan is to begin to work in other communities in Zambia. And then—hoping that [my husband's home country of] Zimbabwe changes politically—we'd love to do these types of projects there.

How do the recipients of the new buildings thank you?

The best part is seeing how much happier the kids are. Students that we saw four years ago tell us how much they like being in the new building, and how much easier it is to read: They can see their books and it's not hot [inside the school] anymore. It's the best thing that you can hear because then you know the building actually works. □



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SOURCE: REED CONSTRUCTION DATA

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METRO POPULATION, 2011

SOURCE: ECONOMIC MODELING SPECIALISTS

799,402

PROJECTED METRO POPULATION, 2021

SOURCE: ECONOMIC MODELING SPECIALISTS

-5.8%

POPULATION CHANGE, 2000–2010

SOURCE: U.S. CENSUS BUREAU

7.4%

METRO UNEMPLOYMENT, FEBRUARY 2012

SOURCE: MICHIGAN LABOR MARKET INFORMATION

3.8 MILLION S.F.

CLASS A OFFICE INVENTORY

SOURCE: COLLIERS INTERNATIONAL

27.1%

CLASS A OFFICE VACANCY RATE, Q4 2011

SOURCE: COLLIERS INTERNATIONAL

614

COMMERCIAL-BUILDING PERMITS ISSUED IN 2011

SOURCE: CITY OF GRAND RAPIDS

\$89,500

ESTIMATED MEDIAN HOME-SALE PRICE, APRIL 2012

SOURCE: ZILLOW

LOCAL MARKET

Grand Rapids, Mich.



TEXT BY MARGOT CARMICHAEL LESTER
 AND CLAIRE PARKER

FOR DECADES AND DECADES the traditionally conservative community was resistant to shed its past,” says architect Michael Corby, FAIA, of his hometown, Grand Rapids, Mich. But all that changed in 1991, when a public–private partnership called the Grand Vision Committee (now the nonprofit Grand Action) began planning for a revitalized Grand Rapids.

The new development is “a result of the vision and investment of local families who have long-term commitments to the city,” Corby says. “They have the connections to the city’s past and can keep its essences alive while still introducing fresh, new layers that are allowing the city to evolve into a richer, more vibrant and diverse setting.”

Downtown’s Medical Mile got a boost in 1996 with the opening of Rafael Viñoly’s Van Andel Institute, a private organization for disease research and science education. And around it sprung a variety of medical centers and life-science startups—including most recently the 464,000-square-foot Helen DeVos Children’s Hospital. *Engineering News-Record* named it Best of the Best in the healthcare category in 2011; its rooftop garden received an Honor Award from the Michigan Chapter of the American Society of Landscape Architects.

The Right Place, a regional economic-development organization, estimates that the local life-sciences sector is growing faster than the national average, with 27% employment growth over 10 years. That fuels the metro

area’s population growth rate—which is putting a strain on housing inventory and affordability. Partnerships are addressing that need.

One example is 38 Commerce, designed by Corby’s firm, Integrated Architecture. The 87,000-square-foot, eight-story mixed-use project features five commercial floors and seven floors of apartments and condos, plus additional retail on the ground floor. Brick and beams salvaged from the original building grace the commercial lobby and connect the new construction with its past. The LEED-NC project was funded by the sale of 20-year tax-exempt bonds and received an Honorable Mention in the 2011 AIA Grand Valley Chapter Design Awards.

Furniture City also invests in cultural and recreational facilities. It’s home to the first LEED Gold-certified museum in the nation, the Grand Rapids Art Museum, completed in 2007. The Salvation Army Ray & Joan Kroc Corps Community Center, designed by Isaac V. Norris & Associates, opened in 2010. This 106,560-square-foot, LEED Gold center—which includes fitness facilities, a performing arts and worship space, and an amphitheater—earned an AIA Grand Valley Chapter Design Awards Honor Award in 2011.

“There are many generous individuals, corporations and family donors that we can thank for helping Grand Rapids achieve its success,” says Brian Barkwell, AIA, another native son, and principal architect and owner of Via Design. “That means that things happen here.” □

solved



CHALLENGE

Unite form and function to create a captivating facade for Arizona State University's Walter Cronkite School of Journalism and Mass Communication – a project with a tight budget and an even tighter schedule.

SOLUTION

Metal Sales' T23 and T13-A panels were quickly and seamlessly installed on every side of the large facility, achieving a strikingly customized, yet cost-effective aesthetic appropriately inspired by the FCC Radio Frequency Spectrum Allocation Chart.

RESULT

"Metal Sales is our go-to company for metal panels. Their wide selection yielded an individualized result out of standard options for this unique design, helping us to meet strict budget and schedule limitations."

Mathew Chaney, AIA,
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Suspension Lighting

TEXT BY WANDA LAU
PHOTOS BY NOAH KALINA



Link SP is one fixture in LZF's Link-S collection of suspension fixtures comprising multiple layers of Möbius strips made from the manufacturer's trademark wood veneer, Polywood. Measuring 9.4" high by 16.5" wide, Link SP hangs from a brushed-nickel canopy on a 6'-long transparent cord. Available in eight colors, including red (shown), Link SP uses a 100W (maximum) incandescent lamp or a 15W compact fluorescent lamp. • lzf-lamps.com • Circle 100



Bloom by Ligne Roset is a suspension (shown) or floor fixture that features a sculpted shade made from interwoven foam rings. Available in black or white, the shade has an approximate diameter of $21\frac{3}{4}$ ". With a height of 59" including the matching-color cable, the fixture comes with a 15W E26 fluorescent lamp. • ligne-roset-usa.com • Circle 101

Designed by Alvar Aalto in 1950, the **A338 Bilberry** pendant manufactured by Artek is suited for spotlight applications. Painted white, the 22cm-tall, 18cm-diameter steel fixture suspends 250cm from a white plastic cable. The ceiling canopy measures 12cm in diameter. Bilberry uses a 9W compact fluorescent lamp or 40W incandescent lamp. • artek.fi • Circle 102

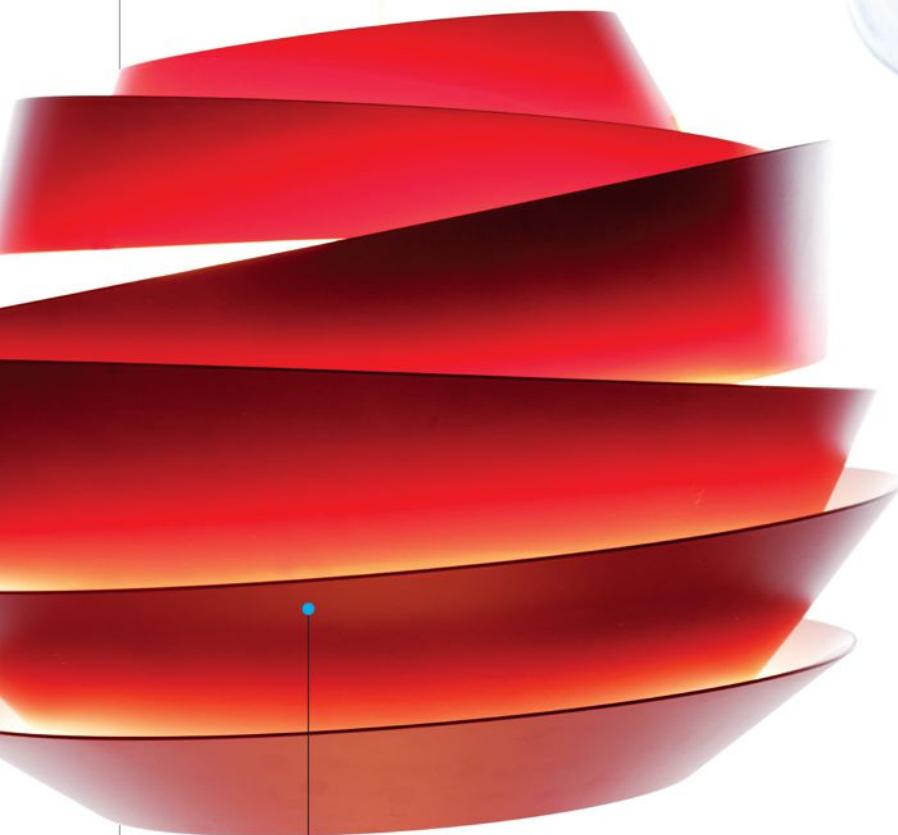
Handmade in Finland using sustainably certified birch wood, **Secto Design Oy's Secto 4201** luminaire features a shade constructed from laminated wood slats connected by rings of high-strength aircraft plywood. Measuring 45cm tall with a 25cm diameter, the pendant hangs from a 150cm-long cable and uses an A19 incandescent or GU24 fluorescent lamp. Secto 4201 comes in three finishes, including white laminated birch (shown). • sectodesign.fi • Circle 103



Flos's Fucsia 1, designed by Achille Castiglioni in 1996, features a conical blown-glass diffuser that provides direct and diffused light. The glass fixture has a 1.5"-sandblasted bottom edge and a translucent silicone ring. It operates with a 40W R50 E14 reflector incandescent bulb. The 5-lb. fixture is 13.6" tall with a 6.3"-diameter base; a 192"-long cable connects the fixture to a white ceiling canopy. • flosusa.com • Circle 104

Estiluz's Siso T-2995 pendant features three interlinked, polished chrome aluminum rings encircling a translucent glass light source. With an 18 $\frac{7}{8}$ " diameter and an 8 $\frac{1}{4}$ " height, Siso hangs a maximum of 78 $\frac{3}{4}$ " below its 4 $\frac{1}{2}$ "-diameter ceiling canopy. The pendant uses three 26W compact fluorescent lamps or three 100W incandescent or halogen lamps; a larger version, Siso T-2996, will be available this spring. • estiluz.com • Circle 105

Made from hand-blown glass with a chrome-plated finish, **Shaker** by **Eureka Lighting** uses a 50W MR16 halogen, 60W incandescent, or 4W LED lamp as a light source. The 9.72"-tall fixture hangs from a three-pin mechanism inside the glass body with a 60"-long clear cable or 36"-long rigid stem. The diffuser comes in clear, translucent chrome, or translucent gold. • eurekalighting.com • Circle 106



The opaque polycarbonate coils of Foscarini's **Le Soleil** fixture directs light to project upward and directly downward. With a $24\frac{7}{32}$ " diameter and a 17" height, the luminaire can hang a maximum of 200" below a $6\frac{5}{16}$ "-diameter ceiling canopy. It can use several types of halogen or fluorescent lamps for its light source. • foscarini.com • Circle 107



The **Omega S 40** pendant by Leucos has a polycarbonate structure that measures 15" wide by $15\frac{3}{8}$ " tall. Weighing 5 lbs., the fixture can suspend a maximum of $70\frac{7}{8}$ ". Available with a clear or transparent yellow diffuser, Omega S 40 uses a 100W incandescent or 23W fluorescent lamp. • leucosusa.com • Circle 108





Seattle-based design studio **Graypants** repurposes cardboard boxes to create the **Drum Scrap Light**, a handmade fixture with a steel frame and frosted, tempered glass lenses. Treated with a Class A fire-retardant, the nontoxic lampshade comes in 18", 24" (shown), and 36" diameters with respective heights of 8", 10", and 13". The fixture comes with an 8'-long black or white cord and matching ceiling canopy. It uses three incandescent or compact fluorescent lamps. • graypants.com • Circle 109

Eleek's Liquid, an energy-efficient drop fixture, may be used independently or in groups of three to five to create a multipendant chandelier. Handmade in Portland, Ore., with a handblown, etched-glass diffuser and 100%-recycled cast-aluminum or 90%-recycled cast-bronze body, the fixture is available in several finishes, including natural aluminum with the River Rock finish (shown). Liquid is 8 $\frac{3}{4}$ " tall with a 2 $\frac{1}{2}$ " diameter, and uses a 3W LED. • eleekinc.com • Circle 110

Designed by Roberto Menghi in 1968, **FontanaArte's Globo di Luce** features a blown-glass globe with metallic finish and an anodized-aluminum internal reflector. Suspended on a transparent cord a maximum of 98.4" below a chrome-plated metal ceiling canopy, the 11.8"-wide-by-11.4"-tall pendant uses a 75W T4 G9 halogen lamp; a 17.7"-wide-by-16.9"-tall version is also available. **Globo di Luce** comes in red, silver, or gold. • fontanaarte.it • Circle 111

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Power Players

THE RACE TO HARVEST SOLAR ENERGY EFFICIENTLY IS RIValed BY THE STRUGGLE TO STAY ON TOP OF NEW PHOTOVOLTAIC TECHNOLOGIES. FOUR DESIGNERS SHARE THEIR THOUGHTS.

TEXT BY BRIAN LIBBY
ILLUSTRATIONS BY PETER ARKLE

In the past decade, the photovoltaic (PV) industry has experienced massive gains in technological innovation and production volume. But the market has been volatile, with international competition driving down the cost of solar panels along with the solvency of promising American manufacturers. Photovoltaics and its crystalline-silicon modules also face more and more competition from other technologies such as thin-film, silicon-free solar cells, which cost less to produce. When just one hour of sunlight contains the energy needed to power our planet, it's hard to imagine that new technologies capturing our most inherent power source won't continue to heat up.



Mike Nowicki, SmithGroupJJR

Although solar-film technology has gained market share, SmithGroupJJR electrical engineer Michael Nowicki, based in Detroit, says that crystalline PV panels will continue to dominate. He's excited about the potential of many recently introduced products, including **Dow Powerhouse Solar Shingles**, which "integrate PV into the traditional roofing shingle," he says, and **Konarka Technologies' Power Plastic**, an organic PV material that can be fitted to curves. **Lumos's LSX** frameless PV module eliminates the typical panel's metal frame and "creates a clean, sleek appearance," Nowicki says.

Most promising to Nowicki is **Graphene**, a lattice of carbon atoms that "has much better electrical, mechanical, and thermal properties" than traditional semiconductor materials. The material is stronger, he says, and "PV made from Graphene would be cheaper because they'd use less material to make a substrate electrically conductive." The PV could be deposited on many materials, such as glass. "One article talked about applying it to clothes. It sounds futuristic, but in reality, I don't know how far it is," Nowicki says. "It would definitely change photovoltaics."



Julian Astbury, Arup

For government-funded projects, Arup often encounters Buy America requirements for PV panels that can be a challenge. "Even though the U.S. market is growing," says Julian Astbury, an associate principal in the firm's Cambridge, Mass., office, "it's not producing as technologically efficient panels as some of the Asian countries." The United States also lags in PV deployment relative to its size. Germany has the world's highest PV use even though the nation is at a higher latitude. "If they can make it work," he says, "why can't we?"

Astbury wonders whether past gains in efficiency are slowing. "If you look at a timeline of PVs against efficiency, you'll find it's actually plateaued," he says. "Even though manufacturers are eking out an extra percent or half a percent, there isn't a huge change."

Instead, he thinks that thin-film solar systems may gain a larger market share. "It has a lower efficiency than traditional PV panels, but the big advantage is cheap production cost: You can use it in a lot more applications. People are starting to develop coatings or even a paint that could generate power at a very low cost. The hope is that we can get much more of it."

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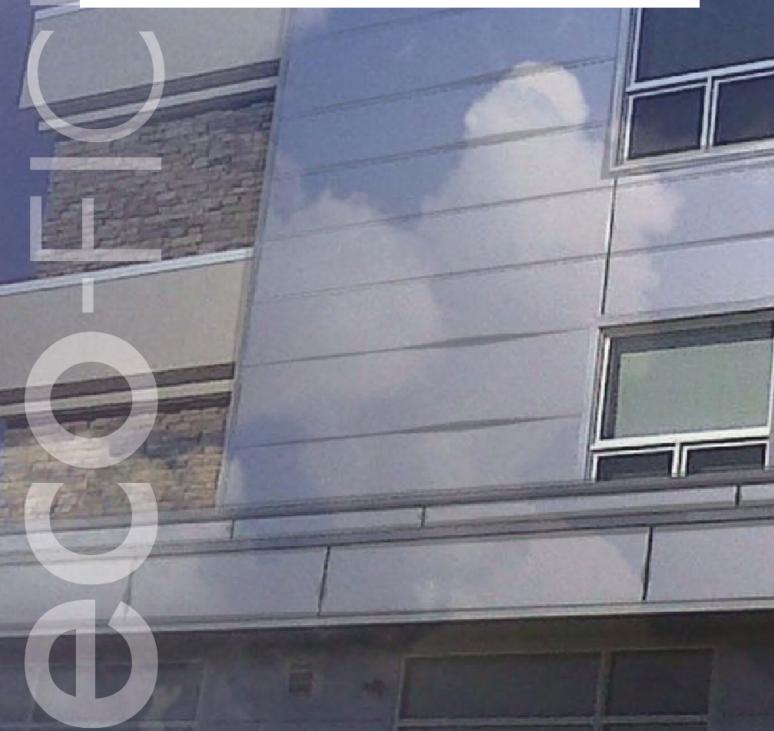


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technology



Zorana Bosnic, HOK

For the range of projects coming through HOK, the firm has to watch solar-panel specifications carefully. "There isn't really a silver bullet in terms of which panel you choose because they are changing so rapidly," says Zorana Bosnic, the firm's San Francisco-based sustainable design director. "All it takes is a project getting delayed for a few months," she says, and the specs have to be rewritten.

The increase in PV use and applications can be attributed to technology as well as government subsidies, though the latter is waning, Bosnic says. "Certainly in California the rebates and incentives are greatly reduced compared to a few years ago." Because panels can still be prohibitively expensive for clients, she says, power-purchase agreements (PPAs) in which a building owner can have rooftop PVs installed without "having to provide that up-front cost" are becoming more attractive. District- or utility-scale renewable-energy supplies might also be more broadly accepted in the future.

Bosnic thinks that thin-film technology is among the most exciting technologies even if it's not as efficient in energy production as crystalline panels yet. "You can put it on the façade and still have the ability to look out."



Scott Shively, DLR Group

Cost parity is key to solar's ability to compete with fossil fuels—and to achieving the Architecture 2030 challenge of net-zero energy usage, says Scott Shively, AIA, DLR Group's Phoenix-based principal. "The PV industry is working extremely hard to drive the price down," he says. "Hundreds of manufacturers out there are doing everything they can to simplify and reduce their production cost to meet that goal." To hit the 2030 threshold, Shively says, buildings will need to produce renewable energy on site: "Because of that, I think we're going to just continue to see PVs evolve."

Building owners will also need fewer PV panels as they reduce energy usage, Shively says. "Your energy-reduction efforts [should] go hand in hand with any PV arrays that you'd put on your building. We've seen this trend in the last 10 years in every market sector ... where everybody's focus now is in reducing their energy consumption."

PV's growing presence is evident in related industries such as roofing, Shively says. "The roofing industry has really stepped up with putting policies in place" to account for PVs in installations and warranties. He also sees panels used more often as shading devices and as weather protectants. "Most of your common panels—the mono- or polycrystalline—are designed to withstand 1-inch hail and 55-mpm winds," he says. □



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FABRAL

Presents:

Energy Efficiency Through the Use of Metal Roofing and Wall Systems - The Revolutionary Way to Save Energy

By: David Brown, Product Development Director, Fabral



The new roof on the Asheboro, N.C. Church of God features an integrated phase change material that has helped reduce energy consumption by more than 50%.



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LEARNING OBJECTIVES

1. Explain the concept of phase change materials (PCM) integrated with metal roofing and/or wall systems.
2. Quantify the comfort and energy savings achieved with PCM wall and/or roofing, and their potential contribution on LEED® projects.
3. Explain the application of PCM integrated with metal walls and/or roofing.
4. Discuss myths and realities of PCM, including modeling for HVAC sizing.

Prior to June 2011, when a church building in Asheboro, N.C., got a revolutionary new metal roofing system, the church custodian had a well-worn routine during summer months: he turned on the air conditioning around 8 p.m. Saturday to ensure the space was cool and comfortable for the Sunday morning worshipers.

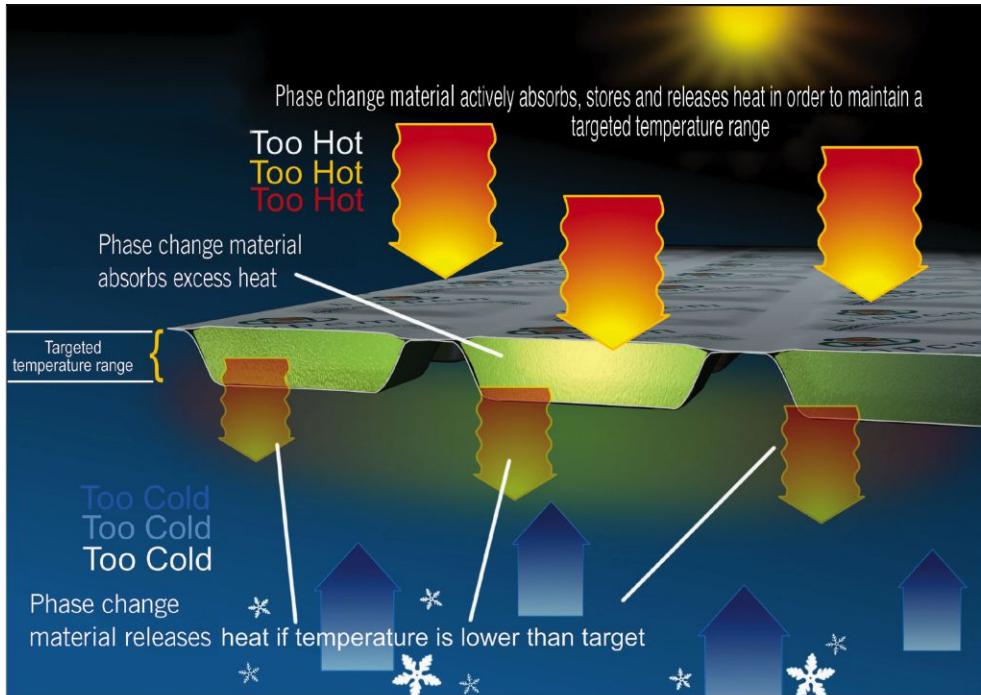
After the metal roof system was in place, which was designed to save energy and increase comfort, the custodian changed his routine to a remarkable extent: He was able to turn on the air conditioning at 6 a.m. on Sunday to achieve the desired temperature.

So what happened?

The roof system happened. While metal roofs and metal-framed structures are valued for their strength, durability, aesthetics, reflectivity, and sustainability, but it is a fully integrated system - metal building envelope with phase change material - that allows maximum energy efficiency.

This roofing system, however, was kicked up a notch and included a plant-based phase-change material (PCM), a term likely to become more prevalent as the technology becomes known. Phase change materials are compounds that liquefy and solidify at specific temperatures. The point at which a substance changes phase can be set at room temperature so the substance absorbs energy above the phase change temperature and releases the energy once the temperature drops below the phase change temperature. This process reduces temperature fluctuations and makes buildings more energy efficient.

The PCM used in the church's metal roofing system comes in sheets that are integrated with the metal roofing and insulation. Rather than just blocking heat transfer, as does insulation, PCM absorbs heat, acting as a heat sink, and releases it when the temperature of the air drops. The material changes from a solid to a gel, and then back again, thus the term "phase change."



Phase change materials absorb heat, acting as a heat sink, and release it when the temperature of the air drops. This phase change happens at pre-set temperatures.

The passive concept begins with a basic law of nature: heat always moves toward cold. Nature's quest for equilibrium is constant and immutable. This system capitalizes on that natural movement. Science and technology have stepped in to create the phase change compounds, which are said to have heat-storing capacities up to 90 times that of concrete.

The energy-efficient metal system used in the church was inspired by testing performed by U.S. Department of Energy's Oak Ridge National Laboratories (ORNL) in Oak Ridge, Tenn. We'll discuss more about those tests later in the article, and results that indicate notable energy savings.

As any architect knows, today's buildings demand reliable, robust, high-thermal-performance envelope solutions that drive energy-efficiency, prevent heat loss, eliminate thermal bridging and control solar gain over their operating lifetime. These performance criteria are key factors in minimizing energy running costs and reducing carbon emissions, while maximizing property value and lease-out opportunity.

These are all performance factors that a design team faced when evaluating a solution for the church's re-roofing application. With the new metal roof in place, the changes to the church's appearance were amazing, but the real excitement centered around the huge reduction in energy usage.

This delay in HVAC activation from Saturday night to Sunday morning was immediately recognizable in the church's power consumption and the overall monthly bills dropped significantly. In just two months, the church had reduced its power bill for this portion of the facility by more than \$1,500 (roughly 50%) over previous bills for the same timeframe. Church leaders report the structure is more comfortable and the energy bills still remain low even though the weekly usage of the structure has increased over previous years.

At a glance, the results from the metal roofing integrated with PCM are impressive:

- Peak summer internal temperatures were reduced from 95°F to 79°F
- 15-hour cool down reduced to 3 hours
- Energy usage reduced by more than 50%

How phase change materials work

We know that traditional insulation works as a simple barrier, or resistor, that slows the transfer of heat. That's a good start, but technology has gone beyond insulation to develop a metal roofing and/or wall system integrated with phase change material technology that absorbs and releases excess heat as needed.

The result?

Buildings naturally stay at a prescribed temperature throughout the day, consuming less energy and keeping room temperatures more constant.

The marriage of a metal building envelope with phase change materials makes sense. Metal roofing and wall systems promote energy efficiency with inherent reflective qualities that allow buildings to stay cooler and, in turn, use less electricity for air conditioning, which means a reduction in power generation and a reduction of pollutants.

Phase change materials absorb and release heat at pre-set temperatures. It is engineered around a fundamental property of nature: the natural tendency of materials to absorb heat when they melt (phase change from solid to liquid) and to release heat when they solidify (phase change from liquid to solid). All materials exhibit this behavior, however there are some in particular that go through this phase change at or near room temperature, absorbing and releasing heat in the process.

When both elements (metal envelope and PCMs) are brought together and the integrated system is placed in quantity into the structure of a building, the phase change material is able to absorb heat during the day and then release it at night. This makes the entire energy cycle more energy efficient. Fewer kW hours are used to heat and cool buildings while the phase change material intelligently captures and releases otherwise wasted energy.

An integrated system increases the comfort, safety and efficiency of buildings by:

- Reducing indoor temperature fluctuation

- Reducing the need for heating and cooling
- Reducing greenhouse gas emissions
- Reducing overall energy use
- Shifting energy usage away from peak demand

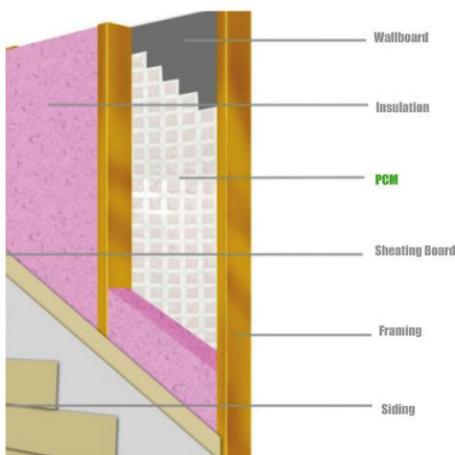
On a broader scale, all natural materials absorb heat when they melt (phase change from solid to liquid) and release heat when they solidify (phase change from liquid to solid). Certain engineered materials (PCMs) can store tremendous quantities of heat per mass through these transitions. When PCMs are installed in quantity in a building structure, they will absorb heat (cooling the building) during the day and release heat (heating the building) at night. The results, then, are twofold: 1) A shift in energy demand to off-peak hours and, 2) an overall reduction in that demand.

At a Glance — How phase change materials Work

- PCMs absorb and release energy at just the right time
- When air conditioning is cooling, PCMs absorb heat that enters through the insulation
- When heating, PCMs absorb heat prior to escaping through the insulation
- PCMs use energy that would have been wasted

Application of PCM integrated With Metal Walls and/or Roofing

A roofing or wall system that includes metal panels, insulation and phase change material will create an ideal



application. This system is: easy to design and install; ideal when designing for comfort; and, ideal when you don't want the energy efficient system to alter the overall building design aesthetics.

An integrated metal roofing and/or wall system with phase change materials is installer friendly and can be integrated in both roofing and wall systems for new construction and retrofit applications. This flexibility encourages end-user innovation in taking advantage of phase change energy storage properties. It offers high-performance, smart building technology, a way to "go-green" efficiently, quickly and easily.

This roofing assembly detail illustrates how phase change material fits into the assembly of a roofing system. It is placed over the decking and under the insulation.

For new or retrofit applications, PCM can be stapled, screwed or glued to metal or wood studs. Unlike insulation or vapor barriers, PCM is not dependent on a continuous and unbroken plane to be effective. The more space covered by the material — as performance is based on thermal mass as opposed to thermal resistance — the better the results. But gaps will not negate the effectiveness of the material in place. This makes it much less dependent on skilled installers than other building envelope enhancements.

PCM in a wall assembly, either new or a retrofit, is demonstrated to the left. As you see, it is placed between the wallboard and the insulation within the framing members.

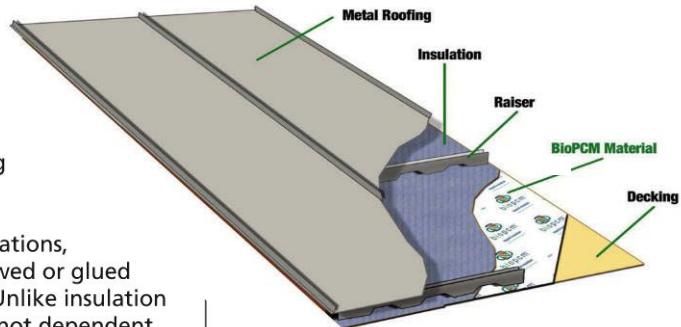
Testing of phase change material With Metal Cladding

In the past few years, an increasing amount of testing has been done to measure the efficacy of phase change materials in building envelope construction. In Arizona, two identical sheds — 16' X 12' X 8' — were constructed by Arizona Public Service to test the effectiveness of PCM in the enclosure. In both, the wood stud walls

were insulated to R-19, while the roofs were insulated to R-30. The interiors were finished with gypsum board. The 4:12 roofs got composition shingles.

To round out the preparation for the testing, the buildings were conditioned with high-efficiency heat pumps controlled by digital programmable thermostats set at 73° F for the heat mode and 77° F for the cooling mode. In the control building, no PCM was installed. In the other building, PCM was added to the walls and roof.

As you can see from the graph below, the HVAC run times were much greater for



the control building and much less for the PCM-lined building. The implications of shorter HVAC run times are immense: less cost for energy, less carbon creation, smaller HVAC unit needed, less stress on power grid during peak times, more consistent indoor temperature, more tenant comfort, etc.

In the chart below, you can see the savings on the PCM-lined shed as compared to the control building. In Arizona's cooling climate, the savings ranged from more than 10 percent to more than 28 percent each month. While these test sheds were less than 200 sq. ft. each, you can imagine the savings on a residential, commercial or industrial application.

This is good news for architects whose sleek designs don't need to be greatly altered or bloated to achieve favorable energy performance; highly energy-efficient roofs and walls can be designed with thinner assemblies.

While architects, contractors and specifiers have the opportunity to include phase change materials in metal walls, roofs and buildings, there are potential PCM applications in many other areas of industry and manufacturing, including:

- Transportation of perishables (hot or cold) — Food, pharmaceuticals, explosives, blood
- Electronics and Telecommunication Shelters — Protects temperature sensitive equipment
- Automotive — In the BMW 5 Series, heat from the radiator is stored to ease cold starts (2-days at -20 degrees C)
- Green Houses — Need A.C. and/or heat to protect plants
- Chemical Reactions — Where cooling and heating is required for the same batch
- Solar — Increased efficiency in Crystalline PV applications
- Construction — Building envelope, reduces overall energy consumption; 30% in heating & 50% in cooling.

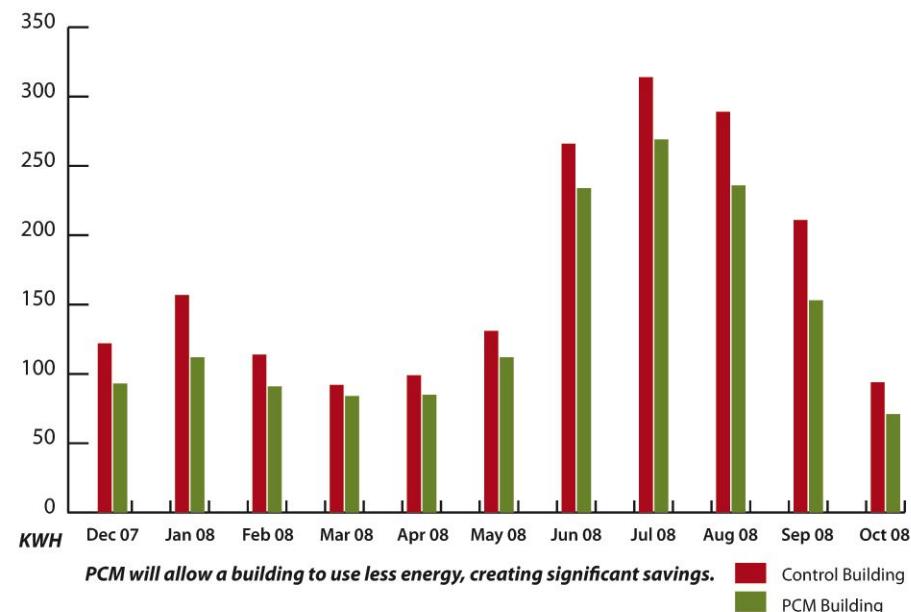
Proven energy savings and comfort

A building can experience up to 30% energy savings in heating and up to 50% energy savings in cooling through the specification and installation of phase-change materials.

In some climates, the interior temperature becomes so consistently comfortable that air conditioning can be completely eliminated. In all cases, energy savings from phase change materials enables smaller, more efficient heating and cooling units to be installed, and direct savings are realized by reduced electric and gas utility bills and lower heating and cooling costs.

These are not just claims made by manufacturers, designers or installers. Rather, third party testing has proven these statistics. During the third quarter of 2009, three experimental attics utilizing different roof retrofit technologies were constructed at the ORNL Natural Exposure Testing Facility.

The first test attic represents the traditional way of roof retrofit, where the old roofing materials are totally removed for disposal in landfills, and replaced with



This data from the Arizona Public Service comparative analysis shows that the building with PCM experienced a reduction in kilowatt hours used year-round.

a new roof cover.

The two other attics utilized roof-over-the-roof technologies. Both technologies use metal roofing panels capable of being installed directly over the existing roofs without requiring removal of the old materials. These metal panels contain a cool-roof coating to minimize solar heat gains.

In the third test attic, roof-integrated PV laminate and PCM heat sink were utilized as well. The test data demonstrated that roof-over-the-roof re-roofing can be a very effective way of not only refurbishing of the old aged roofing surface, but also improving energy performance of existing roofs. Over winter and spring of 2009 and 2010, the PV-PCM attic showed a 30% reduction in the heating load compared to the conventional shingle attic. On average, the maximum day time temperatures were lower by about 15% in the PV-PCM attic compared to the shingle attic; this difference was higher in the late-spring and summer months.

The testing was developed by ORNL and funded by the Metal Construction

Association (MCA). The outcome at a glance:

- 30% reduction in heating load
- 50% reduction in cooling load
- 75% reduction in nighttime heat loss

In North Carolina, a private manufacturer conducted a study of two buildings constructed and climate controlled, identical except for the use of PCM in one of them. The goal was to maintain a constant temperature inside the buildings for a six-month period, from April 2008 to September 2008, and measure the energy used to do this.

The red bars in the chart on page four show energy consumed by the control building, while the green bars are energy consumed by the building constructed with PCM. The chart shows the remarkable energy savings achieved with phase change materials, and spike of use prevented during June.

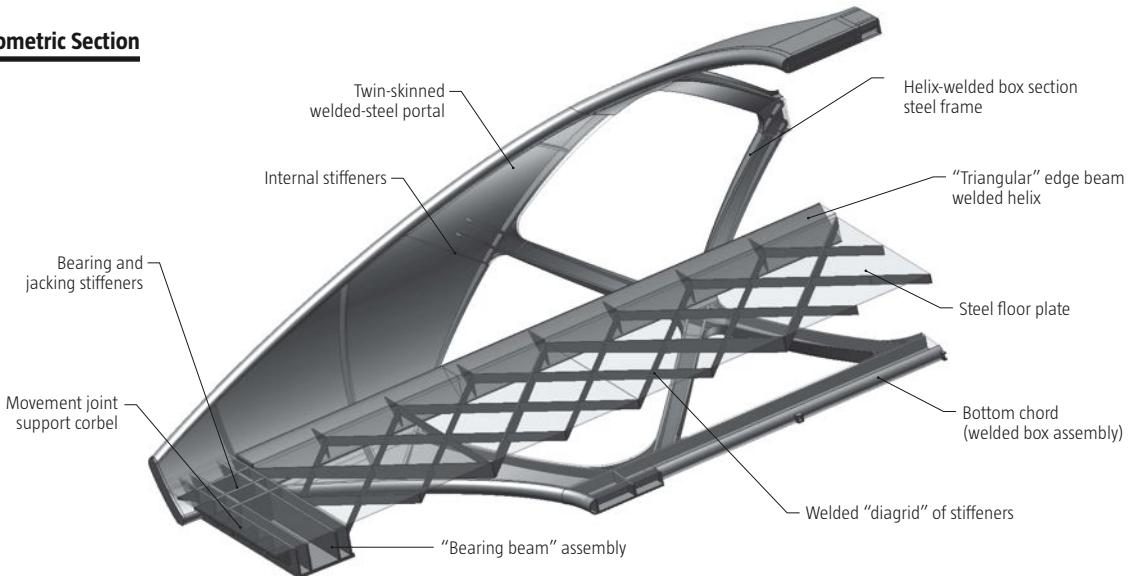
This article continues on www.hanleywooduniversity.com. Go online to read the rest of the article and complete the corresponding quiz for credit.

→ DETAIL

Making Peace

TIGHT SITE CONSTRAINTS AND CALGARY'S INCLEMENT WEATHER WERE NOT THE ONLY CHALLENGES SANTIAGO CALATRAVA FACED IN DESIGNING ONE OF THE WORLD'S LONGEST CLEAR-SPANNING HELICAL BRIDGES.

Isometric Section



TEXT BY WANDA LAU

WHEN CITY OFFICIALS in Calgary, Alberta, Canada, autonomously selected Santiago Calatrava, FAIA, to design a footbridge in 2008, controversy brewed among residents who lamented both the absence of a design competition and the project's roughly \$25 million price tag. As the first visible investment in pedestrian and bicyclist infrastructure of this magnitude in an "auto-oriented city," says local ward alderman Druh Farrell, the Peace Bridge and its design "deviated from people's ideas."

Though the city council later revised its procurement process to prohibit the design of future projects from being "sole sourced," she says, the council maintained that "it would be important to have someone of Calatrava's notoriety" to design the Peace Bridge, which is the first of three new footbridges planned downtown.

Despite continued protests, few residents could deny that the bridge would bring fame to Calgary and the communities—Eau Claire and Hillhurst-Sunnyside—it connected. This past March, an estimated 7,000 people, including Calatrava's son Micael, gathered to celebrate the opening of the architectural landmark.

Just 5.85 meters high and 8 meters wide, the compact, ruby-red helical bridge stretching across the Bow River stands out from the landscape as well as from Calatrava's portfolio of soaring, white-concrete, cable-stayed bridges. Site constraints limited the design team to a 7-meter-tall envelope bounded by the river's flood level below and the flight path for a nearby heliport above. Ecological concerns barred intermediate supports in the water, requiring a bridge type able to span the full 126 meters (413 feet). "A tube was a clear contender," says Calatrava, the Switzerland-based founder of his eponymous firm, "but there was a danger of creating a tunnel-like bridge."

Working with technical consultant Stantec, the firm designed a partially enclosed helical bridge structure that acts as a single-span, simply supported truss. The high-strength, welded-steel frame forms two intertwined helixes wrapping an elliptical cylinder. To simplify manufacturing, the purity of the geometry had to be altered: The form of the cylinder was modified to have a curvature based on several circular radii instead of an ellipse's continuously changing curvature.



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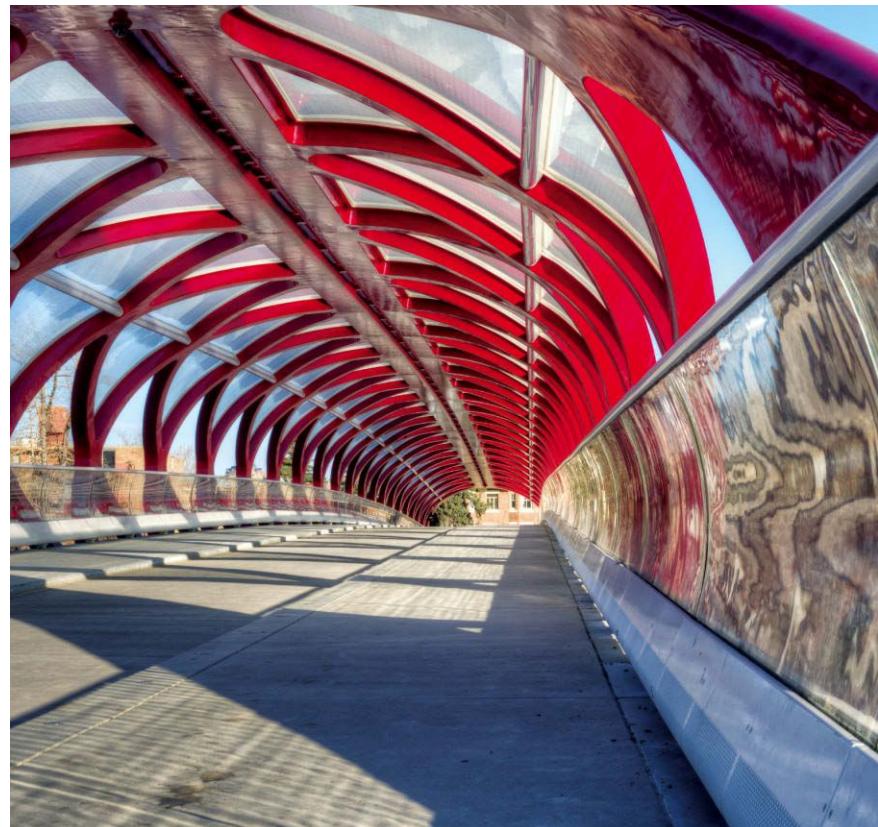
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The Peace Bridge was named in commemoration of local residents in the military and other peacekeeping activities. Measuring 6.2 meters between handrails, the bridge is twice the width of existing footbridges in the area and provides distinct pathways for pedestrians and bicyclists.





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The stiff, helical frame serves as the truss web that transfers loads between the truss chords—linear steel members along the bridge's top and bottom. Transverse strength is provided by two edge beams and the bridge deck—an approximately 110-millimeter-thick concrete deck cast in place on top of a steel deck, which contains a diagrid of 150- to 200-millimeter-tall stiffeners.

Although the helical frame's welded-steel box sections maintain a constant 300-millimeter-wide-by-250-millimeter-tall cross section, "to keep the bridge as light as possible, there is no 'typical' helix component," Calatrava says. Each box is made from plates of different thicknesses based on the particular stresses experienced at its location. Even with the material optimization, the steel helices and deck still weigh about 700 tons.

The custom-fabricated steelwork—made by Augescon in Spain using a series of jigs or templates—was shipped in 15-meter lengths to the site. Workers from Norfab Mfg, based in Edmonton, Alberta, fitted, spliced, and welded the entire helical structure on the riverbanks.

In the winter of 2011, hydraulic rams nudged the bridge across the Bow River on temporary platforms.

"TO KEEP THE BRIDGE AS LIGHT AS POSSIBLE, THERE IS NO 'TYPICAL' HELIX COMPONENT."

—SANTIAGO CALATRAVA

Once the structure cleared the span, construction crews lifted precast-concrete abutments into place. Austria's GIG Fassaden fabricated what Calatrava calls the glazed "leaves" that fit into the steel frame, forming its "open crystalline skin." The glass roof partially encloses the bridge and provides some weather protection for users.

While many locals have yet to embrace the Peace Bridge, its worldwide reception has been generally positive. The structure has become a favorite performance space for musicians, who revel in its acoustics.

In the first week after the bridge's opening, the city recorded 4,400 crossings—89 percent pedestrians, 11 percent bicyclists—in one day; it expects the numbers to increase as the weather warms. Given that Calgary's downtown road infrastructure has reached capacity, Farrell says, the Peace Bridge provides another pipeline that encourages the practice of "active transportation"—a bridge we all should cross soon. □



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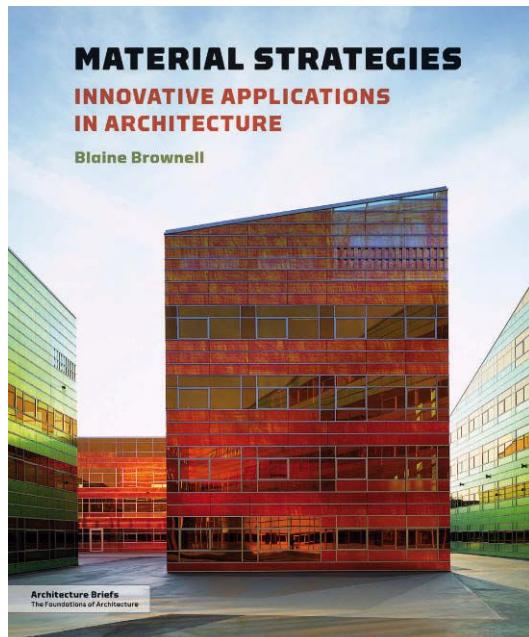
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→BOOK

Building Blocks

AN EXCERPT FROM BLAINE BROWNELL'S NEW BOOK, *MATERIAL STRATEGIES: INNOVATIVE APPLICATIONS IN ARCHITECTURE*, EXAMINES MINERAL USE.

TEXT BY BLAINE BROWNELL



Blaine Brownell, *Material Strategies: Innovative Applications in Architecture* (\$24.95, Princeton Architectural Press, December 2011)

EARTHEN MINERALS were some of the first materials that early hominids used to make shelter and tools. Many ancient myths and religions associated earth and stone with human flesh and bone, respectively—minerals of varying consistency were seen as symbolically connected to the body and its dual characteristics of suppleness and fortitude. Archaeological records indicate active manipulation of stone during the prehistoric period known as the Stone Age, which accounted for more than 99 percent of human existence. The transition from the Stone Age into the Copper and Bronze ages roughly marks the beginning of recorded history.

Loam, stone, and ceramics—the primary materials considered in this chapter—were fundamental to the genesis of civilization, and they gave physical form and order to the first cities. Because of their compressive strength, these materials were appropriate for the thick-walled, low-slung structures that emerged as layers of earth were laid and compacted to make the first load-bearing walls. For millennia this striated architecture signified weight, presence, and longevity.

Today the use of the load-bearing wall has all but

disappeared in industrialized nations and has been replaced by frame construction with applied skins. The persistence of earthen materials in contemporary building despite this transformation is a testament to their powerful legacy. The current applications of stone and brick are generally suspended or self-supporting surfaces over skeletal frames—a perverse transformation from their original use. However, both the broad availability of many mineral resources and the perseverance of stone and ceramics as architectural membranes suggest continued importance of earthen materials in building construction.

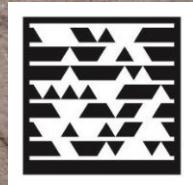
History

Earthen materials were critical to the origins of technology. The development of stone tools and pottery, as well as the construction of early shelters, occurred during the Stone Age (2.9 million years ago–6500 BCE), the first human epoch. Megalithic monuments, such as stone circles, dolmens, and cairns, constructed of large, regularly shaped stones are enduring reminders of tombs and sacred sites of the period—Stonehenge (3100–1600 BCE) being the most familiar example.

The first stepped pyramid, the Pyramid of Djoser, was built in Egypt around 2600 BCE for Pharaoh Djoser. Imhotep, considered to be the first architect, designed and oversaw the pyramid's construction and used rough-cut Tura limestone blocks for the enclosure wall, colonnaded entrance, and pyramid. The use of limestone was a much more durable alternative to the use of mud brick, a material common to early Nile River-valley

→ This excerpt is taken from the chapter "Mineral." The excerpt has been copyedited to match ARCHITECT's house style.





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TODAY THE USE OF THE LOAD-BEARING WALL HAS ALL BUT DISAPPEARED IN INDUSTRIALIZED NATIONS AND HAS BEEN REPLACED BY FRAME CONSTRUCTION WITH APPLIED SKINS. THE PERSISTENCE OF EARTHEN MATERIALS IN CONTEMPORARY BUILDING DESPITE THIS TRANSFORMATION IS A TESTAMENT TO THEIR POWERFUL LEGACY.

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societies and an expedient resource for settlement building, also used in earlier Egyptian tombs.

Djoser exhibits one of the first known uses of the architectural column. The colonnade at the Pyramid of Djoser consists of pillars carved to resemble bundled plants—one of the first instances of architectural transubstantiation of wood into stone. The Greeks continued this approach, developing proportion-based systems and techniques that transformed stone used in building from coarse blocks into refined, specialized modules resembling abstracted components of trees and plants.

The Greeks also further developed ceramic materials—which offer good compressive strength and moisture resistance—from the early pottery-based tiles and fired bricks used in Egypt and Mesopotamia (as early as 4000 BCE) to modular building elements such as roof tiles designed to overlap like fish scales to direct the flow of water (800 BCE). (The word *ceramics* derives from the Greek word *keramos*, meaning fired earth.) The Romans further augmented ceramic technologies in their extensive use of brick, which was often applied to walls of concrete.

Stone technology achieved its apex during the Middle Ages with the construction of soaring Gothic churches. Stonemasons developed increasingly sophisticated vaulting and buttressing technology that allowed stone to reach unprecedented heights, conveying an uncanny lightness and delicacy despite its heavy weight. Although later industrialization enabled greater control in the manufacturing and distribution of stone and ceramics, the arrival of frame construction in the 19th century rendered the load-bearing application of these materials obsolete.

Modern Precedents

Despite the change in load-management practices, stone and ceramics are still widely used. After the ascendance of steel, concrete, and wood-stud framing systems during the 19th century, earthen materials were applied in veneer form—layered with other materials to create architectural surfaces with durability and presence. Antonio Gaudí's constructions of elaborate mosaics using broken clay tiles (called *trencadís*) are exuberant examples of these types of embellished surfaces. Adolf Loos's use of highly figured Cipollino marble in the façade of his Loos House (1910) in Vienna achieves a flamboyance with the material itself. Adhering to precise geometries, the tile cladding on Jørn Utzon's Sydney Opera House (1973) roof shells is another example of the maturation of earthen veneers.

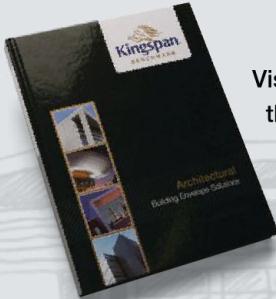


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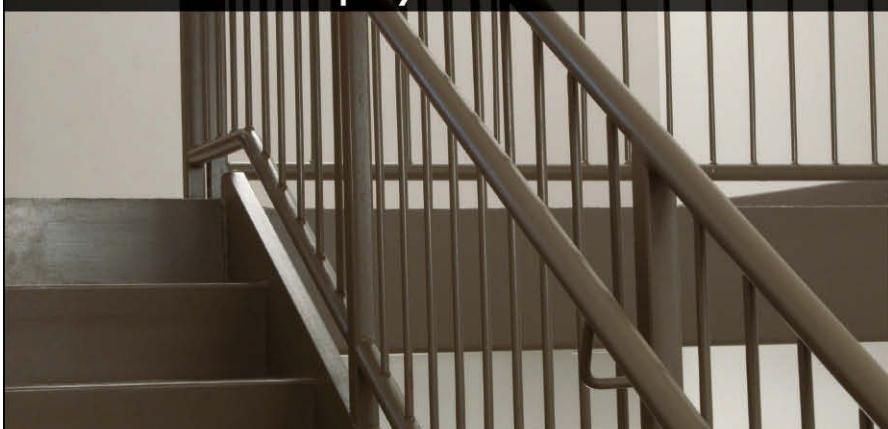
For Uruguayan engineer Eladio Dieste, brick had a more significant role than as decorative veneer. He selected the material as the primary building block for his Church of Christ the Worker (1960) in Atlántida, Uruguay, precisely because it was more familiar to the local farmers than stucco or stone. Dieste explored the little-known structural potential of reinforced masonry in the church, transforming hand-laid brick walls into structural shells. The plan of the one-room church

is elementary at ground level, but the wall contours change with altitude from rectilinear lines at the base to sinusoidal waves at the top. Composed of impossibly thin brick shells, the walls were constructed without joints to be a single undulating unit like the roof. Dieste demonstrated that a humble veneer material could exhibit the structural and geometrical sophistication of thin-shell concrete structures.

While Dieste's church explores structural lightness with brick, the Beinecke Rare Book and Manuscript Library (1963) in New Haven, Conn., achieves visual lightness with stone. In his design for the building, Gordon Bunshaft of SOM substituted conventional glazing with translucent stone—both to convey a sense of gravitas as well as protect the rare books held within. The façade consists of a Vierendeel frame clad in Vermont Woodbury granite on the exterior and precast concrete on the interior; the frame holds translucent white Vermont Montclair Danby marble panels in place. During daytime the 1 1/4-inch- (3.18cm-) thick marble panes appear stark and opaque on the exterior, while sunlight highlights the deep, richly colored veining

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AFTER THE ASCENDANCE OF STEEL, CONCRETE, AND WOOD-STUD FRAMING SYSTEMS DURING THE 19TH CENTURY, EARTHEN MATERIALS WERE APPLIED IN VENEER FORM—LAYERED WITH OTHER MATERIALS TO CREATE ARCHITECTURAL SURFACES WITH DURABILITY AND PRESENCE.

of the stone from inside. At night the relationship is reversed, transforming the enclosure into a softly glowing lantern.

Peter Zumthor's Therme Vals project (1996) exploits the power of stone to create immersive, enduring spaces. Located in a remote village in Graubünden, Switzerland, the thermal-baths structure conjures the image of a rock quarry, and its simple, rectilinear geometries made of many thin layers of stone contrast abruptly with the landscape. Zumthor minimized the material palette to highlight the basic architectural elements of stone, water, and light in the building. The concrete structure is faced with 3-foot-3-inch-(1m-) long slabs of local Valser quartzite stone. The approximately 60,000 slabs cut in three different heights (the three dimensions of each slab add up to approximately 6 inches [15 cm]) create an irregular rhythm while maintaining a regular module overall. Interior spaces convey a brooding atmosphere reminiscent of water-filled caverns. A grass-covered roof completes the impression of an excavated site, rendering the Therme Vals as a modern cairn that is as ageless as it is shrewdly contemporary. □



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United Soybean Board Presents:

Biobased Building Solutions with Soy

By: Paige Lozier



Soy's properties allow its use in a variety of applications from animal feed and human consumption to biodiesel fuel and other industrial uses. Because soy grows in many parts of the world, it represents a readily available and renewable replacement for petrochemicals.



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LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Understand the basic chemistry of soy and how it can be used to produce a wide range of products.*
- *Describe the sustainable benefits of soy based products.*
- *Identify emerging new uses and applications of soy-based building products.*
- *Examine new technologies and the replacement potential of traditional building materials for soy.*

LEARNING OBJECTIVE 1

UNDERSTAND THE BASIC CHEMISTRY OF SOY AND HOW IT CAN BE USED TO PRODUCE A WIDE RANGE OF PRODUCTS.

SOY IS VERSATILE AND IS USED IN MANY APPLICATIONS

You may find yourself sitting at the breakfast table, enjoying a bowl of cereal with fresh soy milk or some other form of soyfood such as tofu or tempeh. Your yogurt may be fortified with a soy isolate to increase the protein content, while your meatless breakfast sausage is probably made with soy concentrates. There are numerous food products derived from soy protein, but did you know that as a building professional, you could also be using soy-based products on the job site as an alternative to other building materials made with petrochemicals?

The soybean, often referred to as the miracle crop, provides a sustainable source of protein and oil worldwide. Soy is a legume, so it makes its own nitrogen plant food from the atmosphere and helps to replenish soils that have been overutilized and depleted, making it an attractive rotation crop with other crops like grains and cotton. Worldwide soybean production has increased more than 70 percent in the last 20 years, and much of that increase has come from higher yields. In that same time period, soybean farmers have adopted more sustainable farming practices such as reducing tillage, energy and pesticide use. These better practices not only pay off with good yields and more profit for the farmers, but they also mean reduced carbon emissions.

Because soy grows in many parts of the world, it represents a readily available and renewable replacement for petrochemicals. Soy has adapted to grow in temperate regions and does not grow well in the tropics. Even though Brazil is the world's second-largest producer, soy is grown there mostly in the south and not in the equatorial jungles of the Amazon basin; this is about as far south of the equator as the U.S. Gulf states are north of the equator. It is interesting that soy is the only major world crop produced equally in the Northern and Southern hemispheres, so there are two world crops each year leading to a stable world supply.



Soy flour replaces animal blood in foamed, glue-extruded systems for laminating plywood veneers, saving costs in resin usage and reducing glue spread, glue waste and cleanup time.

When it comes to the U.S. soybean oil supply, there's room at the table for both human consumption and industrial uses of soybean oil and meal. About half of the U.S. soybean crop is exported around the world. The other half is processed here in the U.S. into two components – soy meal, which is high in protein, and soy oil. Soy meal, which makes up 80 percent of the soybean, is primarily used as animal feed and a small percentage is further processed into human food. Recently soybean meal has found its way into use in making wood adhesives as well.

Crude soybean oil is refined into many different products. The U.S. food industry consumes about 83 percent of U.S. soybean oil for purposes such as cooking, baking and frying. Some soybean oil and other types of oils and fats have been used for centuries to make non-food products like soap and candles. Today a growing amount of soybean oil is being used in new industrial applications such as plastics, inks, coatings, lubricants, solvents and biodiesel. With more than 20 billion pounds of crude soybean oil produced in the U.S. each year and a world supply of refined vegetable oil of more than 140 million metric tons, these new uses of soybean oil don't impact the supply of soybean oil to be used for food.

Soy applications provide dependable industrial alternatives. The industry is committed to the research, development and commercialization of new industrial uses for soybeans and to increasing soybean demand through advancements in soy-based research and technology. New soy-based products are quickly gaining popularity as various industries are educated about the many benefits of soy. Alternative industrial products have seen a heightened demand due to increased government safety and environmental regulations. Improving overall product performance with soy is prompting manufacturers to replace petrochemicals with the renewable product. Research to find new applications for these products continues in an effort to utilize more U.S. soybeans.

A good example, which will be discussed in more detail later, is the growing use of soy adhesives in making plywood. The soy adhesive replaces urea formaldehyde adhesives, which will off-gas formaldehyde into a building. In new buildings that are more tightly sealed, this leads to a buildup of formaldehyde in the air contributing to the "sick building syndrome." Soy plywood is increasingly being used in custom

cabinetry by builders who aspire to more sustainable buildings. Research continues, and similar soy adhesives are being developed for OSB, particleboard and MDF.

LEARNING OBJECTIVE 2

DESCRIBE THE SUSTAINABLE BENEFITS OF SOY-BASED PRODUCTS

LIFE CYCLE PROFILE SHOWS U.S. SOY DELIVERS ENVIRONMENTAL AND ENERGY BENEFITS

Soybean farmers are committed to increasing the supply of biobased products that benefit our nation's economy, including creating green jobs, improving the environment and reducing dependence on foreign oil. They are investing money on research and development of soy bio-based products, are committed to green products and are dedicated to sound environmental practices on farms.

The United Soybean Board released a new peer-reviewed life cycle profile in 2010 that documented multiple energy and environmental benefits of U.S. soybean farming and processing. The life cycle profile confirms why manufacturers are increasingly using U.S. soy in green chemistry for a wide array of biobased products, ranging from biodiesel that fuels cars to spray-foam insulation for buildings. A key objective was to update life cycle inventory (LCI) databases for soybean production and processing as well as its conversion into four key soy-derived feedstocks used in fuel and industrial products: methyl soyate, soy lube base stock, soy polyol and soy resin. Its cradle-to-gate scope begins with soybean farming (the cradle) and goes through processing of products (the gate). "This profile is the first comprehensive life cycle study covering U.S. soybean production through four major biobased products," said Wynne, Arkansas, soybean farmer John Cooper, a USB director. "U.S. soy already delivers environmental and energy benefits. It's exciting to see the trends point to even more in the future."

The following are the key findings from this life cycle profile of soybean production and processing:

- Significant greenhouse gas reductions were identified through soybean production. As soybeans grow, they

remove greenhouse gases from the atmosphere. The 3.36 billion bushels of soybeans in the United States in 2009 removed the carbon equivalent of taking 21 million cars off the road when the figures were computed using the Environmental Protection Agency's Gas Equivalencies Calculator.

- The calculated release of nitrous oxide (N_2O), a potent greenhouse gas, is 85 percent less than the data contained in the current U.S. LCI Database due to a corrected emission factor issued by the International Panel on Climate Change (IPCC) in 2006.
- The updated data show approximately 20 percent less direct energy used in soybean farming due to reduced diesel and gasoline usage. Soybean processing facilities reduced their energy consumption by 45 percent compared with 1998 data.
- Also, as part of the study, a life cycle impact assessment (LCIA) was completed for each of the four soy-derived feedstocks using the updated LCI information. These LCIA's show all four of the soy-based feedstocks each significantly reduced greenhouse gas emissions and had lower fossil fuel depletion impacts compared with their petroleum-based counterparts. The study provides an important resource for companies to update life cycle assessments on their specific products made using U.S. soy.

LEARNING OBJECTIVE 3

IDENTIFY EMERGING NEW USES AND APPLICATIONS OF SOY-BASED BUILDING PRODUCTS

PLASTICS

As prices for petroleum continue to rise, manufacturers are searching for alternatives to petrochemical components for plastics. Various links in the plastics supply chain are researching, testing and including soy-based plastics in products. Soy-based plastics can be divided into two main segments: polyurethane using soy polyols and thermoset plastics such as composites. Building materials are an end use for both of these products because they deliver low cost and high functionality to a variety of markets.

Polyurethanes using soy polyols include urethane foams, binders, coatings, adhesives and sealants. These products



The backing material for many major lines of carpet includes soy polyurethane to replace styrene butadiene or polyvinyl chloride (PVC) backings. Styrene and chlorine emissions contribute to poor indoor air quality, and PVC is flammable.

are proven to perform exactly like their petroleum counterparts, or even better in some cases, when it comes to total weight, strength, durability, versatility and cost savings. Several manufacturers have created soy polyurethane products, including:

- Carpets and turf made with soy polyurethane backing: The backing material for many major lines of carpet includes soy polyurethane to replace styrene butadiene or polyvinyl chloride (PVC) backings. Styrene and chlorine emissions contribute to poor indoor air quality, and PVC is flammable.
- Spray-foam insulation: Sprayed into wall cavities, attics and under floor spaces, soy spray foam has a high R value and expands to seal the space and reduce air infiltration.
- Flexible soy foam: Flexible soy foam can be molded into shapes for furniture and is widely used in car seating or made into bun stock, which is then cut into the desired shape for mattresses, furniture and custom cushion applications.
- Molded rigid soy foam: High-density, lightweight rigid soy foams can be molded like other polyurethane foams used as insulation or decorative materials. The soy content is renewable and reduces the carbon footprint of the finished product.

Soy-based thermoset plastics are primarily composites made with either soy oil and fiberglass or soy meal and natural fibers. Soy oil is used in making unsaturated polyester resins, which first found use along with fiberglass as components of agricultural and construction equipment and are now being used to make molded composites like tub and shower surrounds. Soy meal is used with natural fibers such as wood, kenaf and jute to make engineered composites that can be molded into complex shapes, even corrugated panels, that can be cut and shaped like wood, have great screw-holding properties and weigh much less than solid wood composites.

The versatility and lower production costs make soy plastics an area primed for rapid growth. Each segment has great growth potential, from the farmers who grow the soybeans to the manufacturers that utilize them to the end user that benefits from a high-quality product.

PAINT AND COATINGS

Soybean oil has been a major ingredient in inks, paints and coatings for many years. Because soybean oil, like linseed oil, has good drying properties, it has been used for decades in making alkyd resins, which are used to make oil-based paints. These



With increased emphasis placed on zero/low-VOC paints as odor and toxicity become problems in institutional and retail markets, soy-based paints and coatings enjoy the advantage of being low in VOCs and being made from renewable materials.

are still used for many industrial coatings, but, with the growing popularity of waterborne paints, the market for soybean oil, particularly in the area of architectural coatings, has declined. Research on using soybean oil has led to a new generation of soy materials used in water-based paints. Sherwin-Williams was awarded a Presidential Green Chemistry award for the development of hybrid soy resins used in making a line of interior paints, and Rust-Oleum uses soybean oil in a line of wood stains. Other specialized coatings include soy based metal coatings, reflective white roof coatings to reduce heat buildup inside buildings, concrete stains and seals that penetrate into the concrete to give a longer lasting stain, and deck seals. All enjoy the advantage of being low in VOCs and being made from renewable materials.

Industry research has focused on several areas using soybean derivatives such as creating stable, waterborne architectural coatings, stains and sealers; finding high-performance, low- VOC coatings for industrial applications; and replacing petrochemical polyols with soy polyol

coatings. Industry scientists and engineers are rapidly moving toward solving major issues for soy-derived water-based coatings: hydrolytic stability (shelf life) and yellowing, as well as customer satisfaction in ease of application, speed of finished product drying and cleanup. More and more emphasis is being placed on zero/low-VOC paints as odor and toxicity become problems in institutional and retail markets. There is a great interest in sustainable technology in coatings, and soy is expected to play a large role in resolving this issue.

ADHESIVES

There is a growing use of soy adhesives in making wood panel products. North American mills produce approximately 30 billion square feet of combined particleboard, MDF, plywood and OSB annually. Particleboard and MDF are composed of low-value wood byproducts, such as sawdust bound with urea formaldehyde (UF) resins. OSB is made of layered wood strands oriented at right angles to develop maximum strength and stability. OSB competes with plywood and

has seen significant growth due to its lower price and competitive performance in many uses. Phenol formaldehyde (PF) and, to a lesser extent, diphenylmethane diisocyanate (MDI) are primary adhesives for OSB applications requiring more demanding performance characteristics.

Soy-based adhesives were used to manufacture common wood products, such as plywood, more than 70 years ago. The introduction of formaldehyde resins in the late 1930s provided greater water resistance and lower costs than the older soy products. Soy adhesives fell out of favor until rising costs for petrochemical-based resins and concerns about formaldehyde emissions caused a resurgence of interest in developing new soy-based products for the wood adhesives industry. Innovative research looked at how shell fish like mussels used protein

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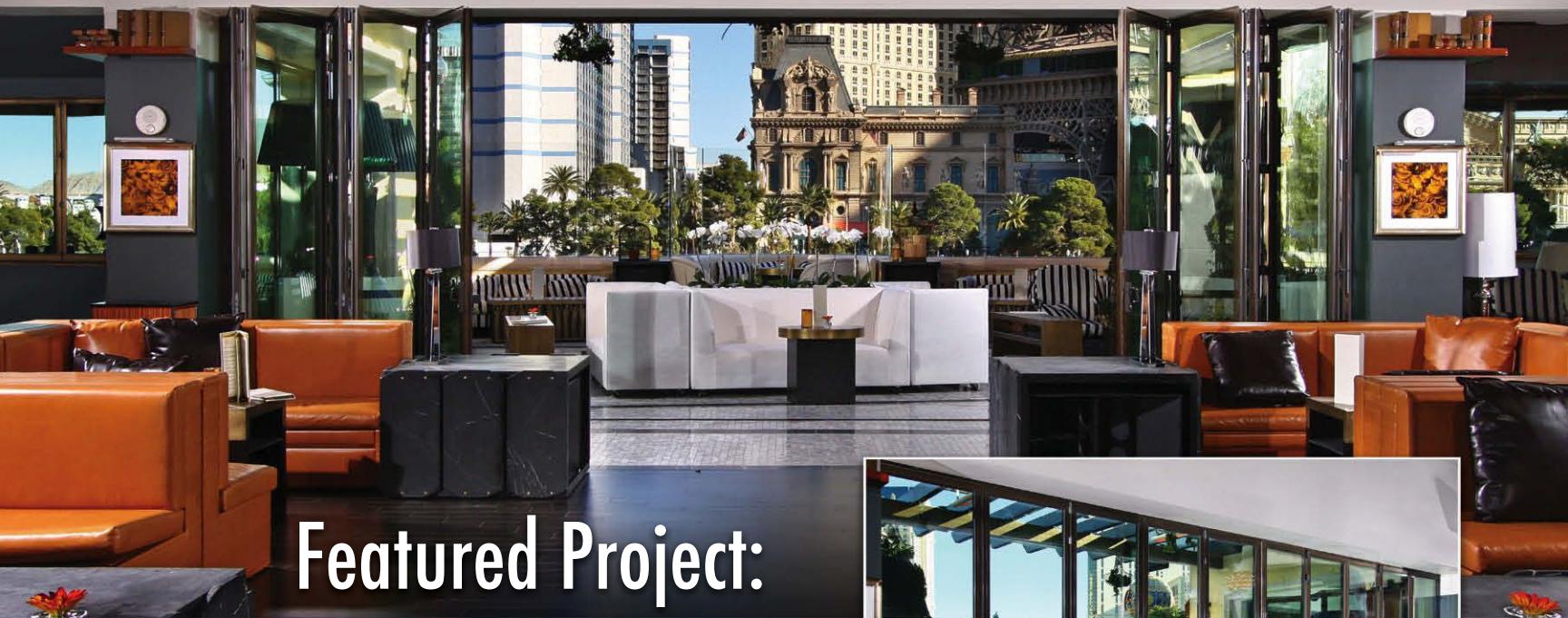
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Learning Objectives

1. Describe why and how building codes evolve.
2. Describe how LEED and the I-Codes differ, and how they complement each other.
3. List or describe two major changes to the I-Codes in the 2012 release.
4. List or describe two major anticipated changes to LEED for the 2012 release.

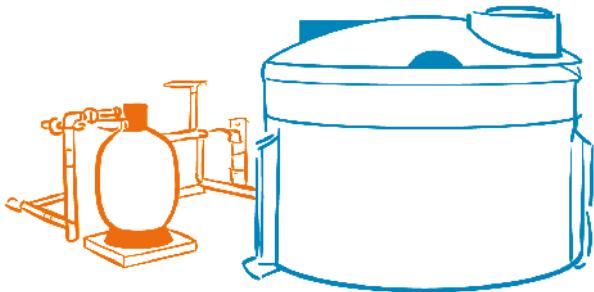
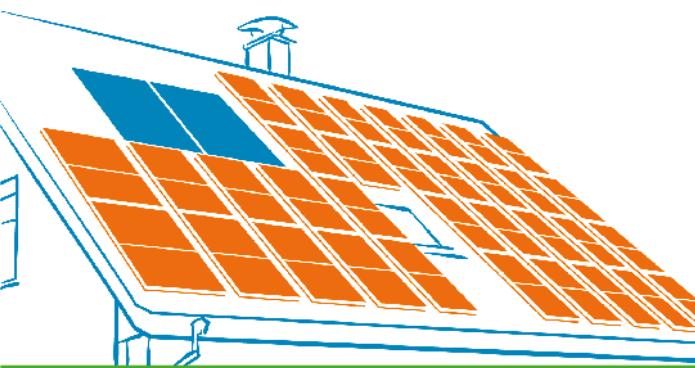
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Code Green

THE INTERNATIONAL CODE COUNCIL HAS UNVEILED ITS LATEST RULEBOOK AND LONG-AWAITED GREEN CODE. MEANWHILE, THE U.S. GREEN BUILDING COUNCIL IS ON THE CUSP OF RELEASING LEED 2012. HERE'S WHAT YOU NEED TO KNOW ABOUT THESE GAME CHANGERS, IN A NUTSHELL.



IN THE REGIMENTED WORLD of building regulation and ratings, 2012 may be considered a year for the record books. In March, the International Code Council (ICC) launched its updated codebook, which included the introduction of the highly anticipated International Green Construction Code (IgCC). Later this year, the U.S. Green Building Council (USGBC) expects to unveil LEED 2012, which insiders assert will be its most significant update since LEED's debut.

While it will take time for these changes to ripple through the industry, architects are expected to know now what these latest standards will mean for their practices. Since many designers can barely fit sleep into their daily schedule, much less the hours needed to scan thousands of pages of text, here's an overview of how we have reached this milestone in codification and the revisions you need to know.

Tools of Trade

The idea behind the shelf-sagging volumes of building codebooks, which have morphed into online databases, is almost as old as the United States itself. Both George Washington and Thomas Jefferson saw the need to establish and enforce a standard of construction to

safeguard the public from structural failure and fire. But it wasn't until the building boom—and consequent disasters—of the late 19th- and early 20th-century Industrial Revolution that code enforcement officials along with industry experts in communities nationwide began drafting model codes as guidebooks for laws governing the building industry.

By the 20th century, an abundance of codebooks produced by local municipalities as well as regional organizations—namely, the Building Officials and Code Administrators International, International Conference of Building Officials, and Southern Building Code Congress International—were overwhelming to designers, and particularly for those designers seeking to expand their practices geographically. In 1994, the regional organizations smartly consolidated into the ICC, which released its first national model codebook, collectively known as the International Codes (I-Codes), in 1995. At that point, the ICC became the only organization in the U.S. producing universal model building codes.

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possible by compiling suggestions from national experts. "When we print the code, it's just a book," says Tom Frost, the ICC's senior vice president of Technical Services. "It's a model code—our recommendation for what a code should be. It doesn't become law unless it's adopted by state or local jurisdiction. Only they have the police power to enforce the code." All 50 states and the District of Columbia have adopted the I-Codes at the state or jurisdictional level.

Meanwhile, the USGBC, founded in 1993, encourages the building industry to protect the environment through its Leadership in Environmental and Energy Design (LEED) certification program, which debuted in 2000. Unlike building codes, which are mandatory, "LEED is optional," says Brendan Owens, the USGBC's vice president of LEED Technical Development. "It's a voluntary rating system intended to recognize leadership in high-performance building design and construction."

While the I-Codes and LEED operate in different ways, they do have a symbiotic relationship. "LEED is the screwdriver, constantly ratcheting up our expectations of what buildings can be," Owens says. "With the advent of IgCC, the building codes have become the hammer, mandating that the construction industry keeps pace. ... [T]here's a floor in the codes and a ceiling in LEED. They feed each other, raise each other up, and together are evolving the building industry."

Two Newcomers to the I-Codes

Every three years, the ICC updates its rulebook through a democratic process. "Anyone except staff can submit a code change," Frost says. "A wide variety of people will propose changes to how certain codes read, suggest that certain codes be deleted, or recommend the addition of new standards."

The I-Codes are divided into multiple categories, including the *International Building Code* (IBC), *International Residential Code*, and *International Fire Code* (IFC). With this year's additions—the *International Green Construction Code* (IgCC), which the industry has been anticipating since the first draft was made public in 2010, and the *International Swimming Pool and Spa Code* (ISPSC)—the total number of categories is up to 15.

Designers versed in the I-Codes may be relieved to know that the majority of this year's changes are editorial in nature—language clarifications and updates to correspond with advances in building technologies and design. The most substantive changes are, in fact, the two new categories.





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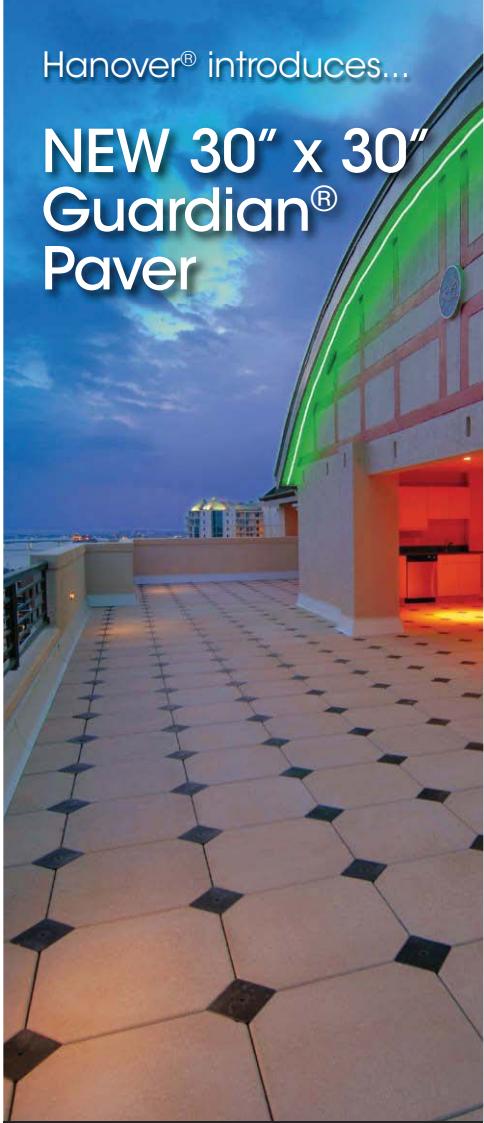
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The IgCC is the first national model code for sustainable design for conventional and high-performance commercial buildings, as well as for residential buildings that exceed three stories. It acts as an overlay to the all I-Codes—specifically the *International Energy Conservation Code* (IECC) and *ICC 700 National Green Building Standard*, the latter of which sets out model codes for small-scale residential construction. It is not intended as a stand-alone construction-regulation document or to circumvent the requirements put forth in the other I-Codes, such as the IBC and the IFC. It does, though, name ASHRAE Standard 189.1 as an optional path to compliance, so designers can choose to follow that in lieu of the IgCC.

“Since it is written in mandatory language, the IgCC is poised to create environmental benefits on a scale unachievable by purely voluntary green building programs such as LEED,” Frost says. Unlike LEED, which allows project teams to pick and choose how to earn their points, the IgCC requires a threshold of sustainable performance in specific areas: Site Development and Land Use; Material Resource Conservation and Efficiency; Energy Conservation and Earth Atmospheric Quality; Water Resource Conservation and Efficiency; Indoor Environmental Quality and Comfort; and Commissioning, Operation, and Maintenance.

The IgCC mandates that projects meet several requirements. For example, a building’s energy performance must exceed the 2006 IECC’s standard by 30 percent. Plumbing fixture and fitting flow rates must be 20 percent lower than standards in the current *International Plumbing Code*. At least 35 percent of construction phase waste materials must be diverted from landfills, but the IgCC allows a jurisdiction to increase this requirement to 50 percent or 65 percent. Meanwhile, 55 percent of the total materials in each building must be reused or recycled content, or be made of recyclable, biobased, or indigenous materials that come from within 500 miles of the site. For existing sites and buildings, the IgCC requires that whatever is renovated or replaced must adhere to the applicable requirements of the code as though it were new construction.

Much in the manner of a rating system, the IgCC incorporates project electives to encourage architects and contractors to exceed the minimum requirements of the code. A Project Elective Checklist helps the project team identify how its projects can be more sustainable. The IgCC also allows local code officials to tailor the code in accordance with their jurisdiction’s unique environmental concerns and agendas. The additions may include the codes that address urban sprawl, heat-island effects, stormwater runoff and landscape irrigation, and minimum thresholds for water and energy efficiency. The IgCC also contains a table designed to help state, county, and city jurisdictions to determine whether certain provisions should be enforced.

The less-publicized ISPSC code category seeks to improve pool safety and construction for commercial and residential projects in accordance with the Virginia Graeme Baker Pool & Spa Safety Act, named after former



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Building Construction

- Steel structural beams and plates, foundation and wall sections are manufactured using recycled materials.
- Forest Stewardship Council certified sustainable lumber.
- Concrete floors which eliminate the need for additional floor coverings and the use of hazardous cleaning chemicals.
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secretary of state James Baker III's granddaughter, who drowned in 2002 when the suction force from a spa drain trapped her under water. The ISPSC requires that suction fittings for all aquatic vessels comply with the Association of Pool & Spa Professionals 16 Standard, a federal requirement adopted by the U.S. Consumer Product Safety Commission and implemented in 2011. Based on user feedback of crowding on deck areas in public facilities such as water parks, the ISPSC also increases occupant load assumptions listed in the previous IBC edition for decks around water-park aquatic vessels—such as pools—from one person per 50 square feet to one person per 15 square feet in order to address egress concerns.

Code Reload

Updates to the existing ICC categories seek to make the codes easier to interpret and enforce, as well as to improve construction safety. For example, the 2012 IBC adds a comprehensive proposal that clarifies how various provisions such as egress requirements for covered malls—the mainstay for many decades—apply to open mall design.

Wind-load provisions in the IBC are now consistent with the 2010 edition of the American Society of Civil Engineers (ASCE) 7 Standard. Research had found that hurricane wind speeds in the 2009 IBC and ASCE 7 maps were too conservative because the standards were not tailored to buildings' specific exposures. The IBC adjusts wind-load requirements to predict more accurately the forces that a building of a given configuration, exposure, and location can expect. The changes attempt to strike a balance between reasonable safety and cost effectiveness.

The 2012 *International Fire Code* (IFC) now includes requirements for photovoltaic power systems. Roof-mounted photovoltaic arrays, for example, cannot be shut down and retain electrical charges, which present



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a hazard to firefighters. The new IFC section provides requirements to improve safety in the vicinity of solar arrays such as the specification of acceptable circuit locations and signage, requirements for roof power disconnects and access pathways, and restrictions on locating solar panels on roof valleys and hips.

The 2012 *International Plumbing Code* (IPC) requires the listing of all plumbing products and materials used in any building type by a third-party certification agency such as UL; past code versions required third-party certification or testing of only plastic components in plumbing systems. The IPC also now has discharge and recycling provisions for graywater such as using it for toilets or irrigation, or even utilizing purification systems that will return it to the tap. Previously, the IPC mandated that all wastewater go to the sanitary drain system; this revision is a huge boon for potable water conservation.

Leveraging LEED

Before the IgCC was a glimmer in the ICC's eye, there was LEED, the first significant attempt to implement a nationwide standard for defining a sustainable building. Though the rating system has faced criticism about its thoroughness and effectiveness, it has paved the way for other green model codes, such as ASHRAE Standard 189.1. LEED 2012 should go a long way in silencing its critics. "This is arguably the first, biggest technical update to the rating system since we launched," Owens says.

LEED updates its rating system on a regular development cycle via a public process. Volunteers from the building industry, organized into technical advisory groups, review feedback from industry professionals and the users of the more than 12,000 commercial projects and nearly 20,000 homes that have been LEED certified; the LEED steering committee approves all substantive changes along with the opening of the public comment periods; at least two such periods are required before the changes are put forth for a vote. Revisions are finalized to reflect the feedback received.

Set to launch at Greenbuild International Conference and Expo this November, LEED 2012 will ratchet up the rigor of the current version, LEED 2009, with across-the-board changes in every credit category. In the Building Design & Construction and Interior Design & Construction (ID&C) rating systems, the most significant change is the addition of a new credit category, Location & Transportation (LT), which were topics previously folded into the Sustainable Sites category. By giving LT its own category, the USGBC hopes to underline the importance of site selection. The category will reward projects located in densely populated, public-transit oriented areas close to community resources and amenities. Fit-outs pursuing LEED ID&C certification will have "a streamlined pathway to points" if they are located in a LEED for Neighborhood Development certified project, Owens says.

As of press time, the USGBC is still developing the redistribution of points in the LEED categories, but LEED's



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Among the existing categories, LEED 2012 aspirants will find the most substantive changes in Materials & Resources (MR). The USGBC found that the current system failed to acknowledge the effect that raw materials have on the ecosystem and human health. Armed with additional information on life-cycle-based thinking garnered since LEED 2009, the USGBC is organizing MR into four key areas: resource reuse, assessment and optimization, human and ecological health, and waste management. It also establishes credits to encourage transparency in products by manufacturers, with the goal of generating better data related to material sources and contents to improve decision making.

LEED 2012's Water Efficiency (WE) category will address more building water uses, such as using nonpotable water for cooling towers, than did its predecessor. It also sets strategies for achieving long-term water efficiency in buildings. For example, it aims to create a comprehensive water budget that allows designers to determine their project's major water uses and target efficiency measures at the areas that have the largest effect. The updated WE category also includes mandatory requirements for water metering to gauge design versus actual water performance in buildings.

The remaining LEED categories—Sustainable Sites, Energy and Atmosphere,

and Indoor Environmental Quality—have also been made more stringent. The numerous changes run the gamut and include: adding requirements for more building typologies, such as data centers, warehouses and distribution centers, and hospitality buildings; increasing project accountability by strengthening measurement and verification requirements; and big-picture strategic shifts such as the life-cycle thinking that has been built into the MR category. "A lot of thinking up to this point has been in a 'do less bad' mentality," Owens says. "That has been effective up to this point. In the long term, where we want to take the market with the rating system is to a 'do more good' mentality. The end goal, relative to energy for example, is to create buildings that produce more energy than they use."

Turning the Page

Even from this boiled-down synopsis of the most significant ICC and LEED changes among the thousands of pages of requisites, prerequisites, and line items, the trend is clear: We are moving toward a more sustainable and environmentally friendly building industry. With the IgCC as the rulebook, architects will in fact have no choice but to venture down the path to sustainability. And with the yardstick of LEED continually seeking to measure and spur on sustainable-design initiatives, a greener world is one that we—with luck—will achieve together. □

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1. True or False: The ICC's code books help municipalities by making recommendations for what a building code should be.

2. How often are the I-Codes updated?

- a. Every year
- b. Every two years
- c. Every three years
- d. Continuously; changes are made online

3. According to the USGBC's Brendan Owens: "There's a _____ in the codes and a _____ in LEED."

- a. Flaw, opportunity
- b. Floor, ceiling
- c. Screwdriver, hammer

4. True or False: The IgCC is replacing LEED as a guideline for sustainable design and construction.

5. Two major changes to the I-Codes in 2012 are:

- a. The addition of the International Plumbing Code and the removal of the International Residential Code.
- b. The removal of ICC 700 National Green Building Standard to make way

for the inclusion of *International Green Construction Code*.

- c. The option to use ASHRAE 189.1 instead of LEED.
- d. The addition of the *International Green Construction Code* (IgCC) and the addition of the *International Swimming Pool and Spa Code* (ISPSC).

6. The IgCC incorporates project electives to encourage project teams to exceed already stringent minimum requirements. It also includes:

- a. The option to earn points and a certification.
- b. An option for local code officials to address jurisdictional concerns and agendas.
- c. Ten separate categories on which projects are measured.
- d. All of the above.

7. True or False: The anticipated version of LEED 2012 features across-the-board changes in every credit category.

8. One major anticipated change to the 2012 release of LEED is:

- a. The addition of a new category,

Location & Transportation.

- b. The point scale will change from 100 to 110 points.
- c. The removal of the Materials & Resources category.

9. Users familiar with previous LEED versions will notice the most substantive changes to which existing category?

- a. Water Efficiency
- b. Waste Management
- c. Materials & Resources
- d. Innovation in Design

10. The USGBC's Owens has described the LEED rating systems as having operated under a _____ mentality, but the visionaries at the USGBC want to change that to a _____ mentality.

- a. Do less bad, do more good
- b. Use less energy, fully sustainable
- c. Hope for change, create change
- d. Do more good, do less bad

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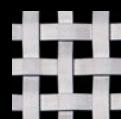
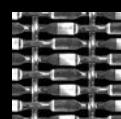
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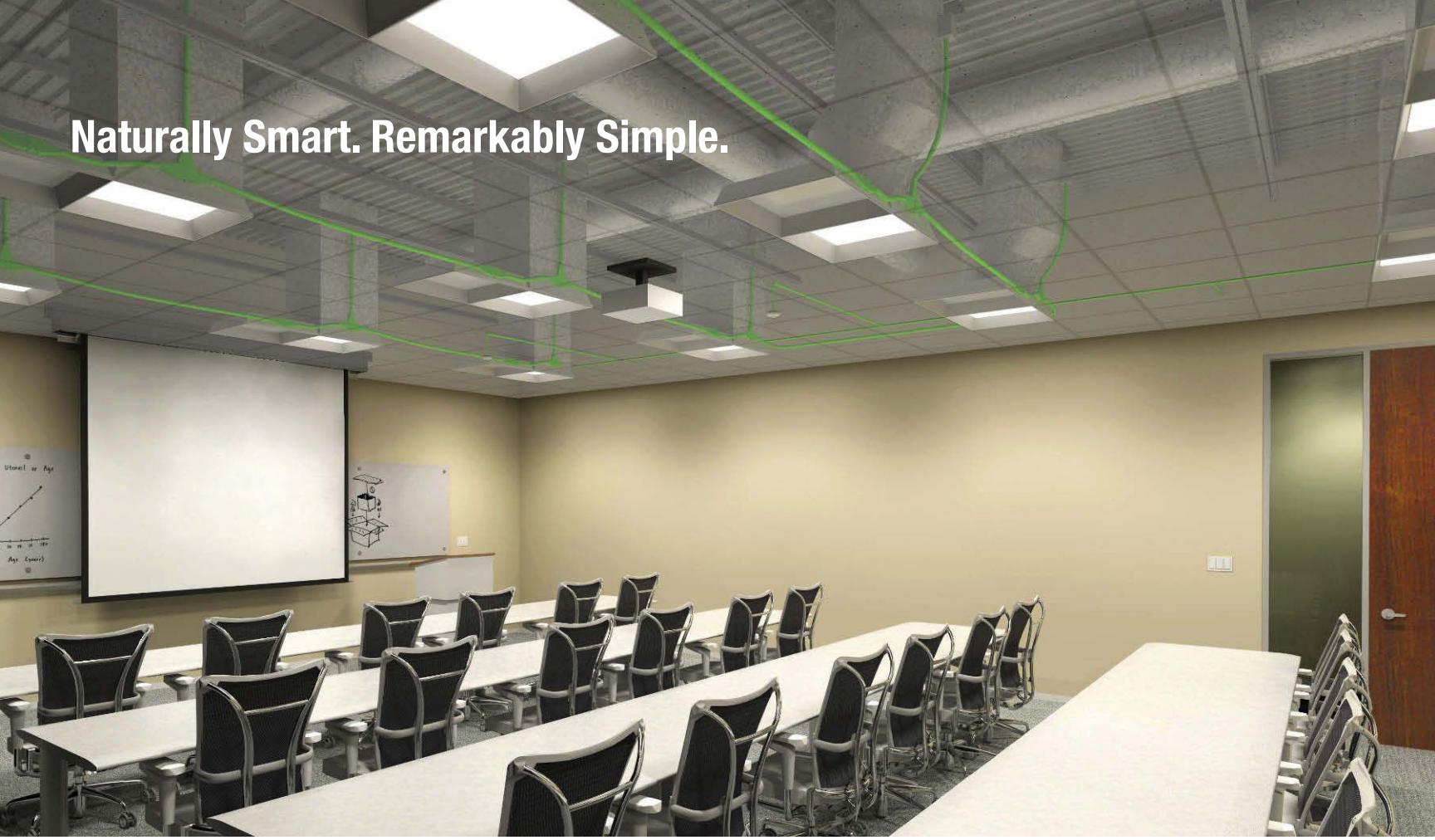


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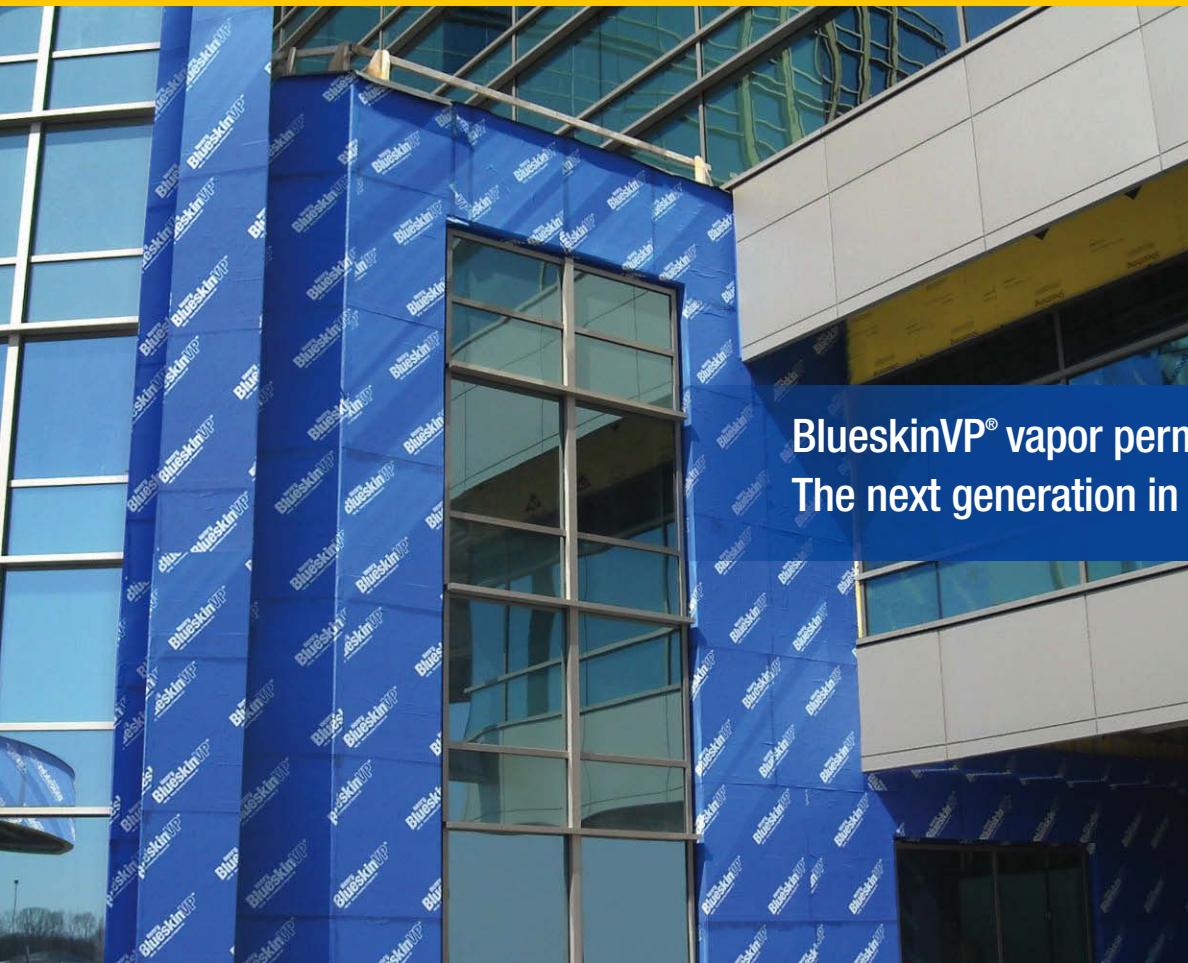
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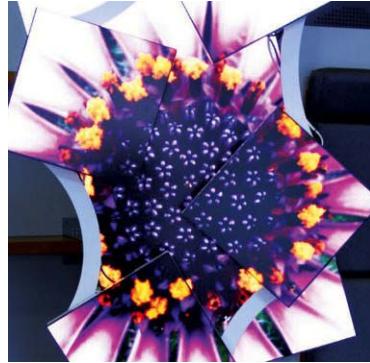
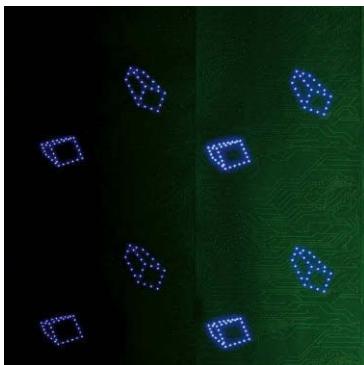


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→ PRODUCTS

Editor's Choice



TEXT BY WANDA LAU

LED Wallpaper from Ingo Maurer by **Architects Paper** is a nonwoven wallpaper that integrates LEDs into its design. Each 320cm-long-by-60cm-wide wallpaper drop contains five pattern repeats with a total of 840 white, blue, or red LEDs that collectively consume 60W. The 10cm-diameter, removable, and reusable wallpaper roll comes with a programming ballast to power light colors and brightness and an aluminum baseboard. • architects-paper.com • Circle 120

The aptly named **ScrW Stool** by German designer **Manuel Welsky** is an adjustable seat based on the principle of a screw. Made from cork, the 30cm-diameter seat can be rotated inside its high-quality, steel-pipe frame to raise or lower its height from 40cm to 60cm. The two-piece seat is now available in the U.S. • welsky.net • Circle 121

The **PT Pen** by **Bald Technologies** allows laptop users to make markups and annotations directly on their screens. A receiving station attached by a magnet to the top or side edge of the laptop connects to the computer via USB. Powered by a rechargeable lithium-polymer battery, the digital pen is compatible with PC and Mac laptops and works on screen sizes up to 16" with a 1,200-dpi resolution. • baldtechnologies.com • Circle 122

9

The number of years between harvests of bark from cork trees, which can live up to 300 years.

SOURCE: CORK FOREST CONSERVATION ALLIANCE

Charles Luck Stone Center's Kreoo by **Decormarmi** stone furniture line includes **Pavé Seating**, a hand-sanded larch wood seat stacked atop a smooth marble base. A metal post secures the seat in a centered or offset position on the base for different sitting configurations. Weighing 200 lbs., Pavé measures 23.6" by 19.7" by 15", and comes in white, black, or dark-brown marble with a natural- or pickled-wood seat. Additional lengths and colors are available. • charlesluck.com • Circle 123

Handmade in Virginia, the **Climbing Vine** mosaic design by **New Ravenna Mosaics** is created using a centuries-old inlay technique from India. The design, representing growth and renewal, may be created using any combination of 72 natural stone colors or 50 jewel glass colors. Stone installations can be used on indoor and outdoor floor and wall applications, while jewel glass installations can be used on interior vertical installations. • newravenna.com • Circle 124

Planar Systems' Mosaic video-wall system turns flat-panel LCD display tiles into an architectural wall finish. The system includes three 4"-deep LED-backlit tiles—which are 15.6" square, 40.4" by 22.8", and 47.9" by 27.1"—that can be hung in three-dimensional concave, convex, and overlapping configurations. The system can display images and videos across the panels. • planar.com • Circle 125



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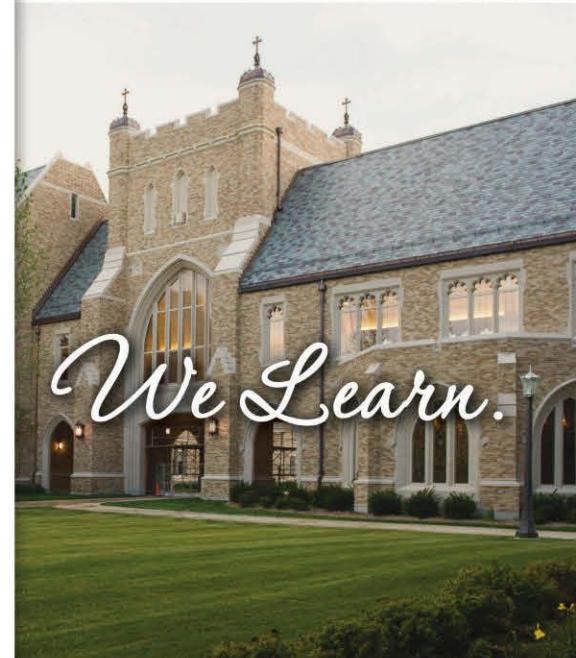
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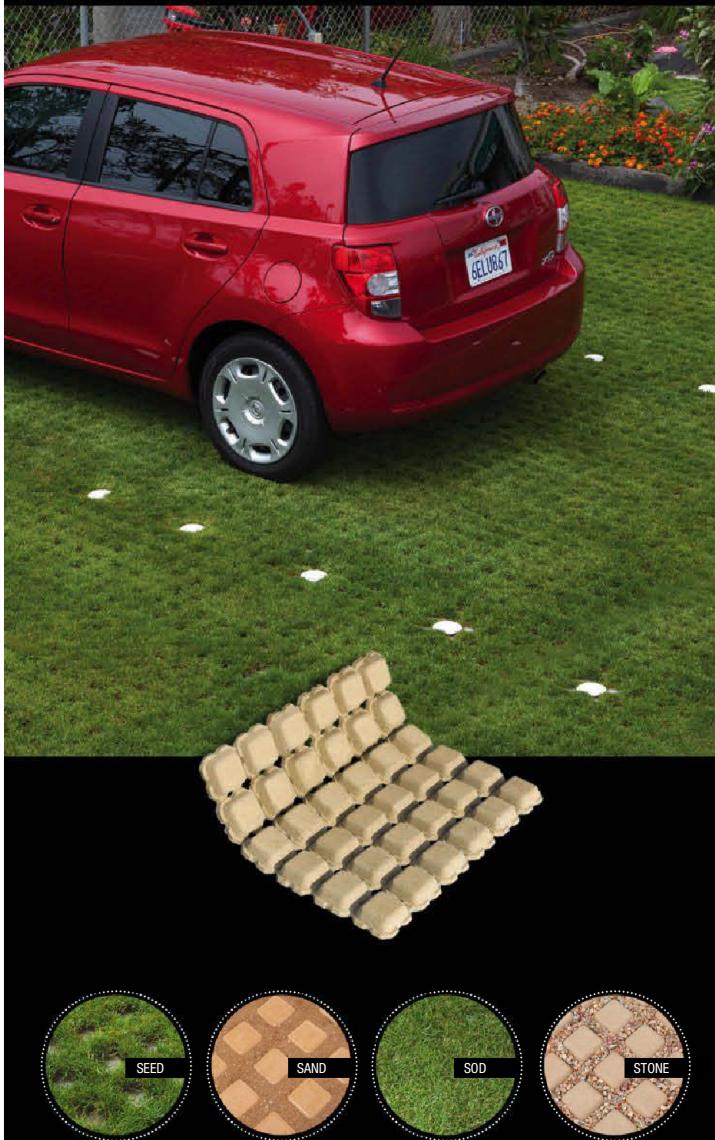
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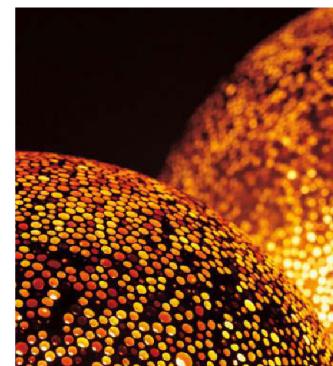
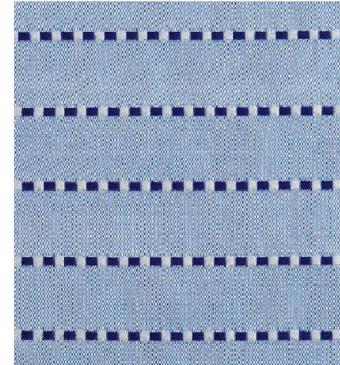
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technology



The eponymous curved hardwood flooring by **Bolefloor** follows a tree's natural growth, using up to 20% more of each sawn plank. Floor systems, custom sized to a project's specific dimensions, are available in oak, ash, maple, cherry, and walnut. The floor comes standard with a tongue-and-groove profile and in 3m lengths, 150mm to 300mm widths, and 13mm and 20mm thicknesses. Other species and profiles are offered. • bolefloor.com • Circle 126

Link Outdoor has launched **Sheers and Stripes**, a fabric collection that includes seven stripe designs—Palma (shown), Crete, Mustique, Bar Harbor, Capri, Amalfi Coast, and Santa Barbara. Inspired by classic menswear fabrics, the 54"-wide fabrics in the Stripes collection come in multiple colorways and comprise 100% solution-dyed acrylic. The collection also includes two outdoor sheer fabric designs and one Oxford cloth solid. • linkoutdoor.com • Circle 127

The handmade, ceramic outdoor light fixture **Sponge** by Spanish manufacturer **Pott**, emulates the porous texture and shape of a sea sponge. The pale terra-cotta-colored clay surface covers a spherical, polyester resin substrate. Available in diameters of 30cm, 40cm, 60cm, and 80cm, Sponge has an opening in its base for a light source; an optional 220V to 240V E27 lamp may be included. • potteryproject.com • Circle 128

The cobblestones in **Soli's** **Modular Granite** pavers are hand sorted and adhered to a heavy-duty mesh backing. Suitable for pedestrian and vehicular traffic areas, the interlocking tiles come in a perpendicular or fan layout. Individual stones are 3.25" by 3.5", 3.5" square, or 4" square. Ten standard colors and finishes are available, including red natural (shown). • soliusa.com • Circle 129

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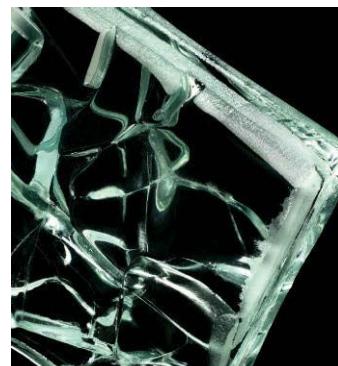
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PPG Industries' low-emissivity **Sungate 600** glass helps interiors retain heat in cold, northern climates. An IGU incorporating the glass, which has a pyrolitic coating on the exposed room-side surface, can achieve an insulation value of R5. Capable of blocking 57% of incoming UV energy, Sungate 600 has a solar heat gain coefficient of 0.70 and a visible transmittance of 0.72. • ppg.com • Circle 130

The **Obidos Decorative Vessel** designed by **Kallista** for Kohler, is an ellipsoidal-shaped, cast-bronze basin for lavatories or powder rooms. At 30 lbs., the basin is 14 3/4" long by 10 1/8" deep and 4 1/2" high; it has a 1 3/4"-diameter outlet and accommodates a water depth of 4". Obidos comes in traditional or white-satin bronze (shown). • kallista.com • Circle 131

Suitable for use as seats or side tables, **Within** by **Studio Vision** **A&D** couples MDF cabinets with complementing three-dimensional wood-veneer façades. Each piece is 35cm square and 45cm tall. Available for purchase this fall, Within will likely be offered with walnut or elm veneer faces (ash shown), and in different colored lacquer finishes, including white (shown). • studiovision.se • Circle 132

Pulp Studio fuses thousands of glass shards onto a glass sheet to create **Fragmento**. The 1 1/4"- to 2 3/4"-thick laminated finish piece can have one or two textured glass faces and a reflective silver coating on one or both faces. The glass, which can be tinted, comes in four patterns that use either large glass pieces—Fragmento (shown)—or small glass pieces—Fragmentito. • www.pulpstudio.com • Circle 133

Educational Facilities See Long-Term Benefits of Fiber Cement Cladding



A 71,000-square-foot elementary school was recently constructed in Erie, Colorado — Red Hawk Elementary was developed as an addition to the St. Vrain Valley School District.

According to Ken Field, Principal Architect at **RB+B Architects, Inc.**, the design for Red Hawk Elementary School stems from the desire to create a vibrant place for kids to learn. The approach to create this type of environment centers around a central space that is connected to all parts of the school and allows for multiple ways of interaction among and between students and teachers.

In an effort to achieve this design, RB+B Architects selected **Nichiha USA** to provide a durable yet modern, contemporary exterior finish. In addition to the modern look of the panels, the ability to have vast color options were a great concern to the architects when deciding on what product to use. Nichiha met all of their requirements.

The architects chose Nichiha's **Illumination Series** panel in a Marigold color finish. This product was designed with a well-developed patented clipping system; the smooth large panels made for a trouble-free, quick installation at a cost-effective price.

"This project continues to illustrate the changing perception within the building and architectural communities of specifying fiber cement panels for educational facilities. Nichiha's panels are quickly becoming products of choice for similar educational developments across the country, providing a low-maintenance product that has a contemporary, welcoming appearance," stated Doug Kennard, Territory Manager for Nichiha. "Nichiha's Illumination Panel Series are ideal for new educational facilities like Red Hawk Elementary School. Our products are easy to install and create sustainable, sophisticated-looking buildings."



As inspiration for this space, the design team at RB+B Architects studied urban scenes during street festivals. During festivals, buildings on each side of the street frame the central space where multiple pavilions of vibrant colors and shapes are installed. The most important aspect of this scene is the movement of people. Their ability to weave in and around pavilions and buildings is a joyful part of experiencing the festival and became the central theme for the elementary design.

"The Illumination Series from Nichiha were a great fit for Red Hawk Elementary for many reasons. However, the size of the panels, the ability to order them in almost any color, and the ease of installation were the deciding factors for using them," stated Jason Kersley, Project Architect with RB+B Architects, Inc. The partnership created with RB+B Architects and the St. Vrain Valley School District is a great representation of Nichiha's continued commitment to the educational design community. Nichiha is excited to be part of such a fast-growing design community and is looking forward to educating other architects on the benefits and advancements of utilizing fiber cement products for upcoming developments.



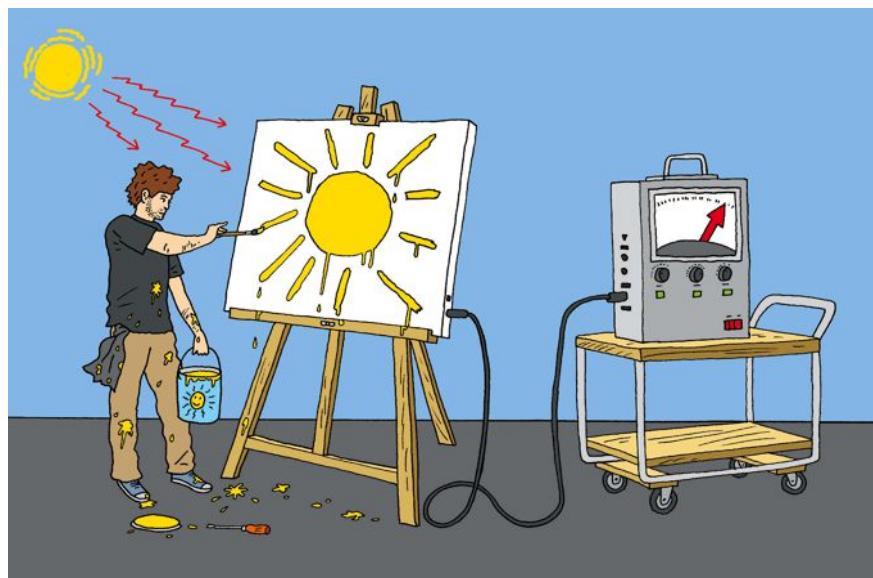
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PAINT IS A UBIQUITOUS AND VERSATILE MATERIAL, used to seal, protect, and enliven surfaces. It is also one of the oldest substances used by human beings, as evidenced by cave paintings that date to some 42,000 years ago—earlier than any known form of building. Today, the international demand for paint is strong. Although the global market is still rebounding from the recent recession, the International Paint and Printing Ink Council reports that 27.2 billion liters of decorative coatings were used globally in 2009.

As the thin veneer that separates a building or object from its environment, paint performs an important protective role with minimal depth. Despite this attenuated boundary, though, scientists have been attempting to expand paint's functionality with the integration of a variety of new technologies.

Photocatalytic technology, for example, is applied to paint in order to improve local air quality. Boysen's KNOxOUT paint incorporates a titanium-dioxide additive, which neutralizes physical particulates in the presence of sunlight—causing them to drop out of the air. With the claim that 1 square meter of the smog-busting coating can eliminate 10 cars' worth of emissions, the company recently donated the paint to street artists in Manila, one of the world's most polluted cities.

Another new technology enables paint to become a seamless, large-scale sensor. Developed by researchers at Glasgow, Scotland's University of Strathclyde, Smart Paint is produced with an integral sensory network of carbon nanotubes. This network is devised to detect microscopic

flaws in surfaces prior to the development of major structural problems. "Current technology is restricted to looking at specific areas of a structure at any given time," says Mohamed Saafi of Strathclyde's Department of Civil Engineering. "However, smart paint covers the whole structure, which is particularly useful to maximize the opportunity of preventing significant damage."

Concern over future energy scarcity has encouraged research into the development of creative renewable-energy technologies, including solar energy-harvesting paint. Although past attempts to develop such a coating have been thwarted by low electrical-conversion rates, the University of Notre Dame's Center for Nano Science and Technology in Indiana recently announced an improved formulation based on the inclusion of power-generating nanoparticles.

"We want to do something transformative, to move beyond current silicon-based solar technology," states Notre Dame professor Prashant Kamat. "By incorporating power-producing nanoparticles, called quantum dots, into a spreadable compound, we've made a one-coat solar paint that can be applied to any conductive surface without special equipment."

The paint, which has been named "Sun-Believable," offers a conversion efficiency of 1 percent—a quantity far below the 15 percent conversion rate of commercial solar cells. "But this paint can be made cheaply and in large quantities," Kamat says. "If we can improve the efficiency somewhat, we may be able to make a real difference in meeting energy needs in the future." □

TEXT BY BLAINE BROWNELL, AIA
ILLUSTRATIONS BY PETER ARKLE



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Proposal for the Lincoln Memorial by John Russell Pope, 1912. National Archives and Records Administration, Washington, D.C.
Main elevation of Capitol competition entry by James Diamond, 1792. Courtesy of the Maryland Historical Society, 1976.88.51

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EDITED BY LINDSEY M. ROBERTS

→**INSTALLATION**

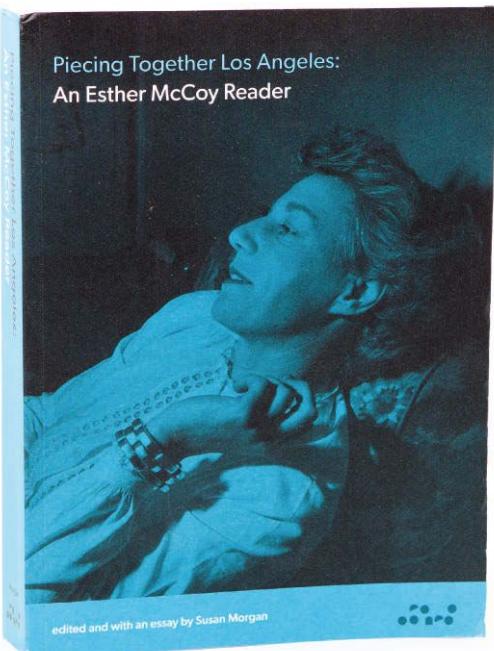
The spirit of the **Avenue** lives on in New Orleans. Although the 1,110-foot-long promenade from the AIA 2011 National Convention and Design Exposition showroom floor has long since been dismantled, it was always meant for bigger and better things. When architecture firm El Dorado designed the Avenue, it partnered with Tulane University's Urbanbuild program to source materials that could be used post-convention to construct a house in New Orleans. Working under Urbanbuild director Byron Mouton, AIA, students are currently building the structure using the promenade's 40 overhead signs, lighting, studs, flooring, and 25 A-frames. The students will partner with a local nonprofit to identify the house's future owners. Read more about the project online. • architectmagazine.com

→APP

CAD may have rendered blueprints obsolete, but the sketch journal has had no digital match—until now. **Paper**, by software developer FiftyThree, responds to a finger or stylus and emulates the variations in line weight, texture, and bleed of conventional tools. Drawings can be stored in virtual journals with customizable covers; then you can email, Tweet, post on Facebook, or stream them to Tumblr. Only the Draw tool comes free with the iPad app; pick up Sketch, Write, Outline, and Color at \$1.99 a pop. • fiftythree.com



Piecing Together Los Angeles:
An Esther McCoy Reader



→BOOK

"Los Angeles spawns strange styles," wrote writer and architectural historian Esther McCoy: Bungalows, Googie, John Lautner, Cesar Pelli, and Frank Gehry, for starters. This is one of the many insights she captured while working from her own Santa Monica, Calif., bungalow, as she documented American Modernism's West Coast roots in her now-classic book *Five California Architects* (1960), and for such publications as *Arts & Architecture* and the *Los Angeles Times*. Sixty-eight essays and memoir pieces make up **Piecing Together Los Angeles: An Esther McCoy Reader**, the first anthology of her work. • \$34.95; East of Borneo Books, May 2012

→INSTALLATION

Ever wonder how those trendy solar panels actually produce energy? The new **Sun Pavilion** at the Nelson-Atkins Museum of Art in Kansas City, Mo., features a series of interactive exhibits that offer some meaningful insight into such minutiae as DC-AC conversions. The pavilion was erected in just 81 days, to run in conjunction with the museum's "Inventing the Modern World: Decorative Arts at the World's Fairs, 1851-1939" exhibit. Inspired by such pioneers as Nikola Tesla, who curated an exhibit about electricity for the 1893 Chicago fair, local architecture firm Generator Studio constructed the pavilion using recycled materials such as scaffolding, shipping containers, and visitor-contributed items. The structure, which is outfitted with 150 solar panels, is off-grid, and most of its materials can be repurposed after the exhibition ends. Through Aug. 19. • nelson-atkins.org





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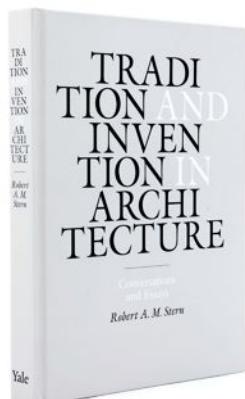
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→ EXHIBIT

Eugene Choy, Gilbert Leong, Gin Wong, and Helen Liu Fong may not have the name recognition of Neutra or Schindler, but an exhibit at L.A.'s Chinese American Museum explores how these architects helped develop L.A.'s postwar architecture. Choy, the second Chinese-American AIA member after I.M. Pei, helped build many of Chinatown's business buildings; Leong created "tract homes for aspiring suburbanites," the curator says; Fong, the only female of the four, designed Googie architecture on freeway roadides; and Wong, the only one still alive, helped develop the master plan for LAX. **Breaking Ground: Chinese American Architects in Los Angeles (1945-1980)** runs through June 3. • camla.org



→ BOOK

The city of Celebration, Fla., his own PBS series *Pride of Place*, and Louis Kahn all make cameos in Robert A.M. Stern's new book, **Tradition and Invention in Architecture**. In his preface to this collection of 26 essays written between 1963 and 2006, Stern notes that "ironically, the past provides us with the last best hope for the future"—and this sets the stage for his study of architectural history. In the essays that follow, he lauds Thomas Jefferson as the "first real American dreamer," discusses the continuing viability of the Classical architectural vocabulary, and comes to the heartfelt defense of Philip Johnson (with whom Stern is pictured in the book) as an undervalued "architect qua architect." • \$40; Yale University Press, February 2012

→ EXHIBIT

Two exhibits in Berlin celebrate the late Italian designer Ettore Sottsass, whose red plastic Olivetti typewriter enlivened office spaces in the early 1970s. **Ettore Sottsass** at Galerie Ulrich Fielder displays some of Sottsass's earlier commissions, including furniture for the Villa Astrua-Grassotti in Turin, and runs through June 23. Hans-Peter Jochum's **Olivetti Connection**, which runs through June 9, features pieces that Sottsass and contemporaries Marco Zanuso, Enzo Mari, and Ugo Sissa (his minimalist 1940 sofa is shown) designed for Camillo Olivetti's renowned Italian design firm. The exhibits document Sottsass's career before his better known work with the Memphis Group, a progressive group of designers who embraced Postmodernism in the 1980s. • ulrichfelder.com; hpjochum.de

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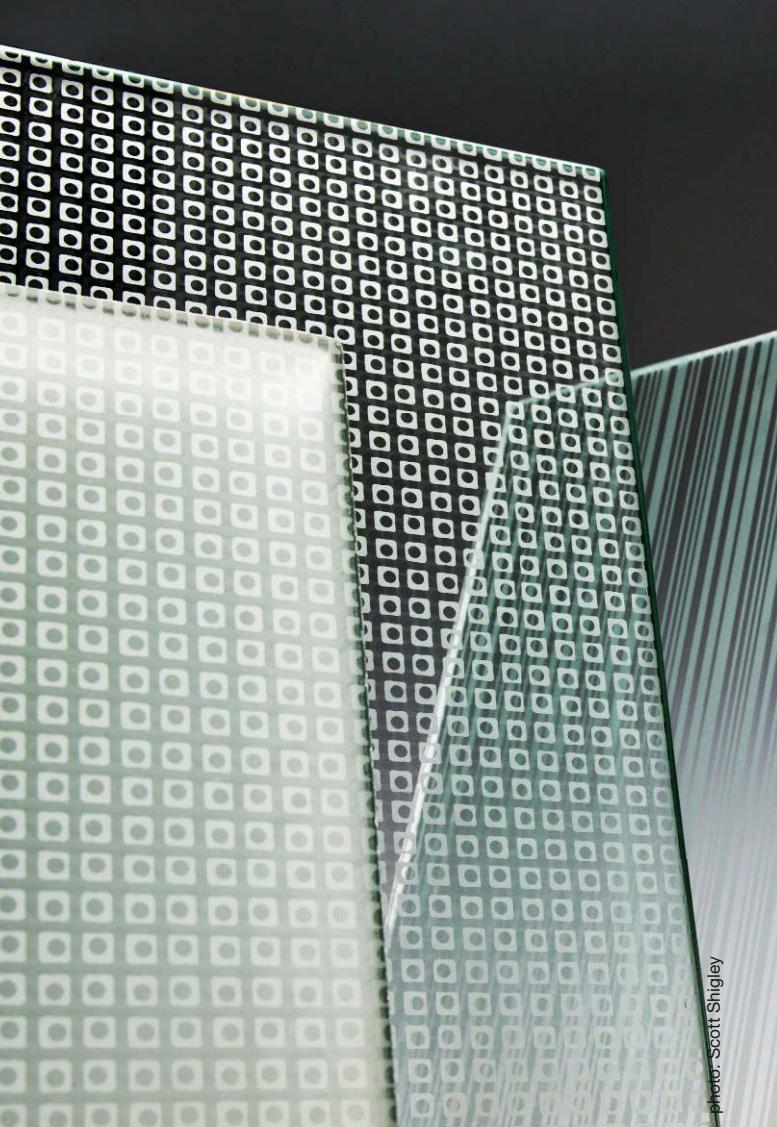
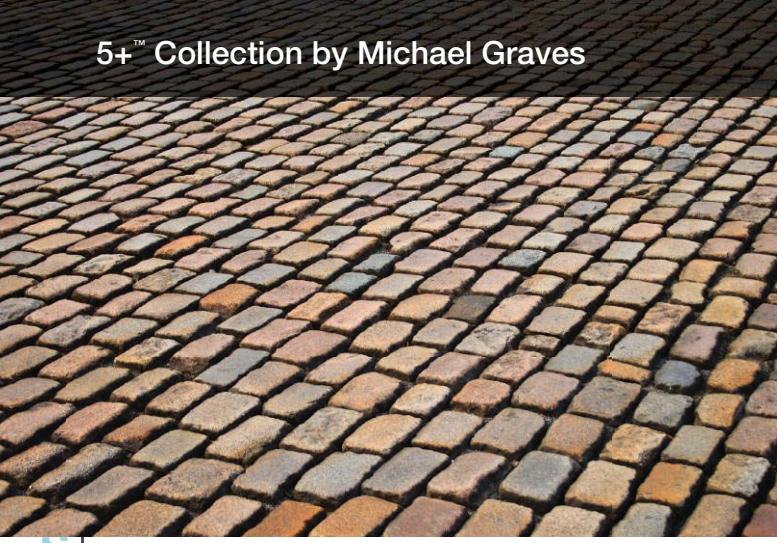


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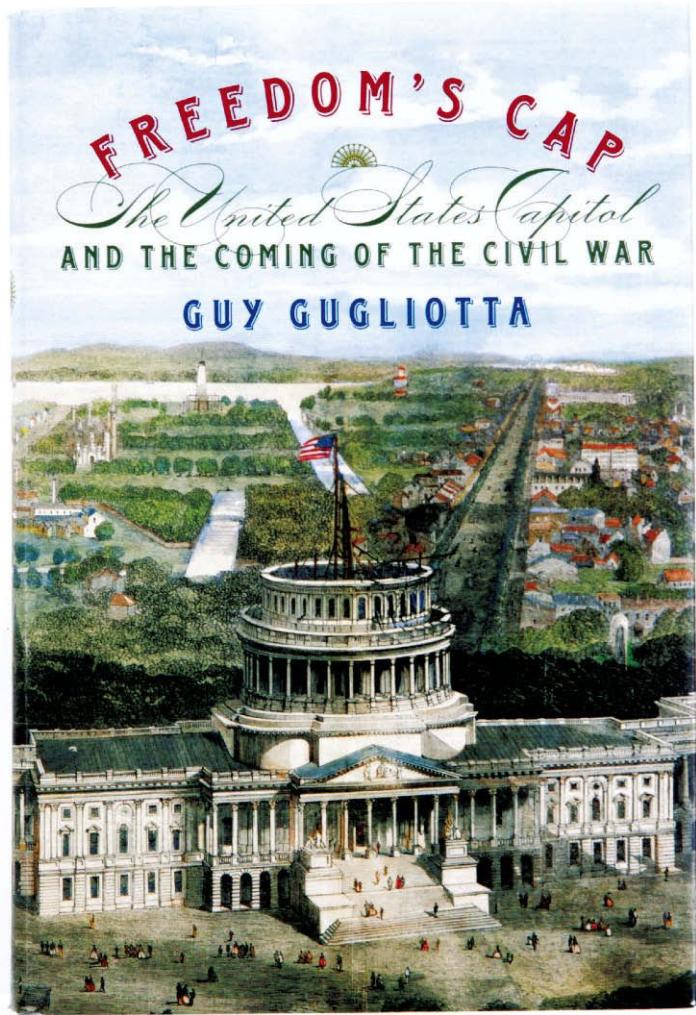
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→ OBJECT

Danish furniture designer **Finn Juhl** helped start the midcentury's embrace of Danish modernism with such classics as the Pelican chair (shown). He would have been 100 this past January, and so exhibits celebrating his works have appeared in Gifu and Tokyo, Japan, and now, in Seoul, South Korea. An exhibit of Juhl's work selected from the chair collection of author Oda Noritsugu (*Danish Chairs*, 1999), runs through Sept. 23. Juhl. Next year, Juhl will be honored in New York when the U.N.'s Council Chambers, which he designed, are reopened following a faithful restoration. • daelimmuseum.org



→ BOOK

"The more things change, the more they stay the same," is how congressional reporter Guy Gugliotta compares the political climate today to the one leading up to the Civil War. The 1850s were indeed a period of profound partisanship, yet the two parties still managed to broker a massive expansion of the U.S. Capitol Building. The effort was spearheaded by future Confederate president Jefferson Davis, at the time a senator from Mississippi. In **Freedom's Cap**, Gugliotta details the rabid politics surrounding the design and construction of the United States' most potent symbol of democracy. • \$35; Hill and Wang, February 2012

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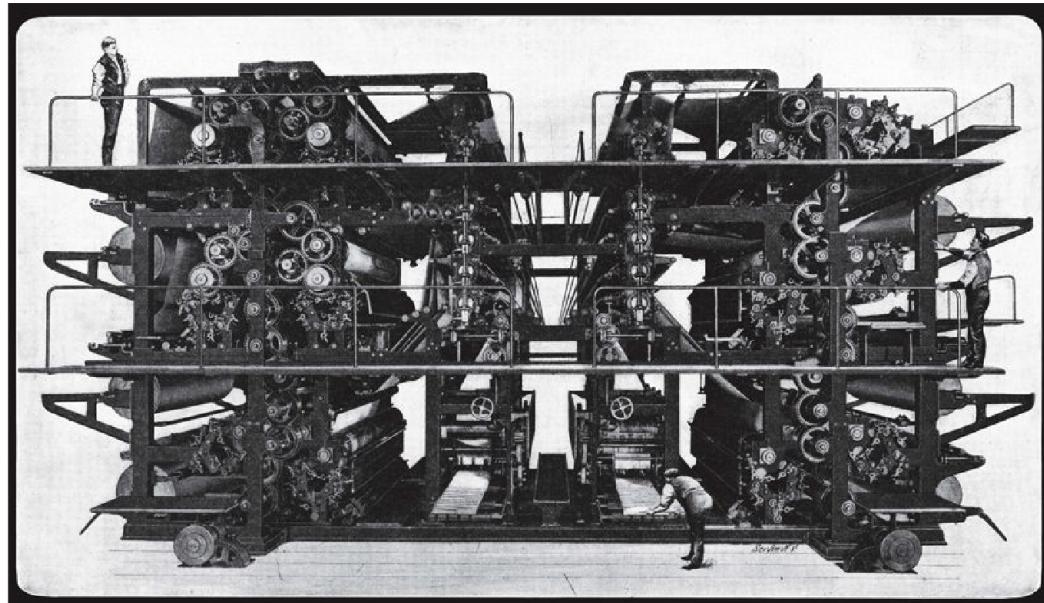
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→ EXHIBIT

Architectural journalists like to think they shape the debate around architecture. At one time, though, the field of journalism shaped buildings themselves. **News Paper Spires**, an exhibit at New York's Skyscraper Museum, tracks the development of "Newspaper Row"—a series of skyscrapers erected between the 1870s and 1920s along City Hall Park that served as headquarters for *The New York Times*, *New-York Tribune*, *World*, and other publications. The exhibit documents the way the buildings' vertical-factory designs reflected the technological advances of the printing presses they housed, such as the 1903 Hoe Double Sextuple Press, shown. Through July 15. • skyscraper.org



→ PODCAST

Katherine Loflin, a consultant on making cities lovable, is taking our urban architecture to the airwaves. She delivers a weekly radio-show-via-podcast, **Place Matters**, on developments in placemaking, interviewing a catch-all of experts: Oklahoma City's mayor, the National Endowment for the Arts' Jason Schupbach, the head of an Australian placemaking firm, and humor columnist Dave Barry. Loflin is the lead policy consultant for the three-year Knight Soul of the Community study, spearheaded by Gallup, of the 26 John S. and James L. Knight Foundation communities across the U.S. The study examines how residents connect to the place they live and the relationship between attachment and economic growth. (Find your city's results at soulofthecommunity.org.) Evidence suggests a direct correlation between community attachment and economic growth. Why? Listen and learn. • katherineloflin.podbean.com



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→ Q&A

G. Martin Moeller Jr.

THE NATIONAL BUILDING MUSEUM CURATOR TALKS ABOUT A NEW EXHIBITION THAT LOOKS BACK AT THE INFLUENCE OF THE PROGRESSIVE ARCHITECTURE AWARDS.

INTERVIEW BY KATIE GERFEN
PHOTOS BY ELI KAPLAN

SINCE THE FIRST Progressive Architecture (P/A) Award was given out in 1953, the program has been devoted to recognizing projects at a crucial moment: after the client is secured and the design is finessed, but before the brick-and-mortar construct is finished. ARCHITECT, which currently oversees the program, began discussions with the National Building Museum three years ago about the possibility of mounting an exhibition on the awards, and now G. Martin Moeller Jr., senior vice president and curator at the Washington D.C.-based institution, has compiled "Unbuilt→Built: The Influence of the Progressive Architecture Awards" as part of a trilogy of exhibitions on unbuilt work. On view from May 14 to Aug. 31 at AIA Headquarters, the exhibit looks at 25 influential projects from the program's nearly 60-year history. It includes photos, drawings, and copies of *Progressive Architecture* and *Architecture* magazines. (All 25 projects were awarded before ARCHITECT inherited the program in 2007.) Moeller took time out from writing the final catalog text to speak with ARCHITECT about the development of the exhibition.

What drives the fascination with unbuilt work?

There's something about seeing the project presented in the hand of the architect—I use the term "hand" broadly because now obviously it's mostly digital—but it's kind of an unfiltered look at the idea. Even by the time the project is finished, even if it's finished completely in accordance with that original design, when it's published in the magazine there's another layer; there are multiple filters between the idea and what we're actually seeing. There are fewer of those when you're looking at an unbuilt project, as presented by the architect himself or herself. And I think that's part of the fascination with this: capturing that moment in time.

How did you select the 25 projects to highlight?

Fortunately, I was able to slough this off a little bit on the good nature of two former *Progressive Architecture* editors, Thomas Fisher and John Morris Dixon, who had

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One of the projects featured in the exhibition is Weiss/Manfredi Architecture/Landscape/Urbanism's Olympic Sculpture Park in Seattle. The project won a P/A Award from *Architecture* magazine in 2004, and was completed in 2007.

BENJAMIN BENSCHNEIDER, COURTESY WEISS/MANFRIDI ARCHITECTURE/LANDSCAPE/URBANISM

already been developing a list of 25 very influential past winners of the award, and a separate list of 25 important architects who have been recognized along with the award. So that was under way. I took a look at their list, and we had some back-and-forth based on a variety of factors. But it's fascinating when you look at the list—I think most people who know the subject matter will say, "Oh, yeah, that was kind of a watershed project." These were seminal works that reflected or predicted changes in the course of architectural design and practice.

How did you define the "influence" of the projects?

There are a variety of types of influence. In some cases these were projects that were direct models for other projects. In other cases they were more influential in changing our thinking about design and technology. In other cases it was fascinating to trace the influence on the careers of particularly influential architects: These projects were influential for the people who did them as much as anything. Often as not they were influential in a broader level outside the realm of architecture.

Were there any buildings on the list that surprised you?

The one that comes to mind is the proposal for the commercial development of the San Antonio Riverwalk by O'Neil Ford and Allison Peery. It was published in 1963. And this is, I think, a very important project, both before they were involved and then after. It's a fascinating case of something that began as a flood-control effort under the New Deal by the Works Progress Administration and is now a huge urban amenity. I knew of Ford's involvement, but didn't realize how critical it had been. And I didn't realize it had won a P/A Award, particularly in 1963, a time we might think of as high Modernism. Here was a project that was not only preservation oriented, but unabashedly historicist in some ways.



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SCHOLARSHIP WINNERS

Overall Winner

Jorge Frances Calvo, fifth-year student at the University of Oklahoma.



AIAS President's Office Door Winner

Casey McLaughlin, fourth-year student at the University of New Mexico.

AIA/Library of Congress Reading Room Winner

Gabriel Florimon, Ian Cruz, and Mark Manakhimov, first-year students from City College of New York.

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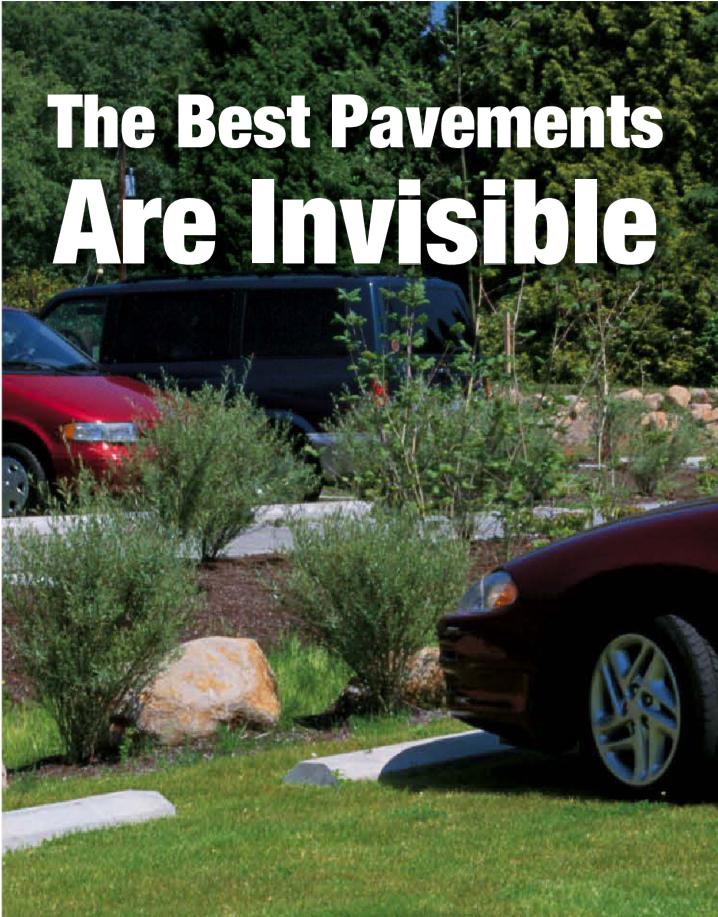
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Yamasaki, Leinweber & Associates' Detroit office for the American Concrete Institute won a P/A Award in 1957 and was completed the following year. Speaking to the building's lasting influence, Moeller notes that the structure is now home to a social-services group. "And they love the building," he says. "This building ... is now in the hands of an organization you would think couldn't care less. In fact, they do care."



I would argue that it was still modern, but certainly responding to the historical context in a way that was remarkably sensitive, right at the time that Penn Station was about to come down.

Were any of these buildings particularly influential to you personally during your study of architecture?

To start with, the Atlantis Condominium by Arquitectonica. I remember the very first lecture I heard from an outside lecturer when I was in architecture school was Laurinda Spear from Arquitectonica. And I just loved the presentation. I mean, here was stuff that to me was not going into the sort of historicist realm of Postmodernism but was having fun, and yet it seemed to be seriously conceived. I've been in that hole in that building and it's an exhilarating experience. To see the kind of cautious commentary of the jury at the time, which I'm sure I read then but didn't remember, and to see it presented again in a context of other projects at a point when architecture was clearly wrestling with this postmodern thing was very interesting.

During your research, did you uncover any unexpected trends in the P/A Awards jury deliberations?

I think, by and large—and maybe this isn't so surprising in the end—it's the willingness of jurors of diverse philosophical standpoints to recognize excellence in whatever form. There were cases of adamant Modernists giving awards to clearly postmodern projects and vice versa. And not just in that easy modern-versus-Po-Mo realm. But they were talking about ideas and how well these people achieved what they set out to do. And that could lead to some surprising results. But I was ultimately encouraged by the willingness of people to really go beyond their own boundaries and say, "This is good." □

To see the projects featured in "Unbuilt→Built: The Influence of the Progressive Architecture Awards," visit architectmagazine.com.



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Architect of the Capitol
Stephen T. Ayers.

→CRIT

Unbuilt Washington

THE ARCHITECT OF THE CAPITOL SURVEYS THE CITY OF WASHINGTON THAT ALMOST WAS, IN AN EXHIBIT AT THE NATIONAL BUILDING MUSEUM.

TEXT BY STEPHEN T. AYERS, FAIA
PHOTOS BY NOAH KALINA

IT'S HARD TO IMAGINE a different Capitol sitting atop Jenkins Hill, an elevated site selected by Pierre-Charles L'Enfant, who described it to President George Washington in June 1791 as "a pedestal waiting for a monument." Washington had directed the three-man board of commissioners brought on to manage the development of the new capital city to hire L'Enfant to design the city and its public buildings. But settling on a design for the Capitol Building wasn't the most difficult decision of the time. For not only could the Capitol have looked much different than it does today, it might not have been located in the new city named for the father of our country in the first place.

Despite Washington's influence and stature, locating our nation's capital in his proposed site near the Potomac River was not a forgone conclusion. Congress had its own ideas of where the capital should reside. Northern members were in favor of sites on the Hudson, Delaware, or Potomac rivers. Southern members liked the idea of two capitals—one on the Potomac and

another farther north, such as New York City.

After much debate, arm-twisting, and compromise, the U.S. Senate passed the Residence Act by a vote of 14 to 12. The U.S. House of Representatives followed suit by passing the act by a vote of 31 to 29. Only two scant votes in both the House and the Senate set the course of history. If those two votes had gone the other way in either chamber, I would be reviewing "Unbuilt Philadelphia" or "Unbuilt New York." But on July 16, 1790, the city of Washington in the District of Columbia was declared the permanent capital of the United States.

"Unbuilt Washington," on view at the National Building Museum in Washington, D.C., features proposed designs for nearly every notable building on or near the National Mall in Washington today, from the U.S. Capitol Building to the Washington Monument. As Architect of the Capitol, I am responsible for the care

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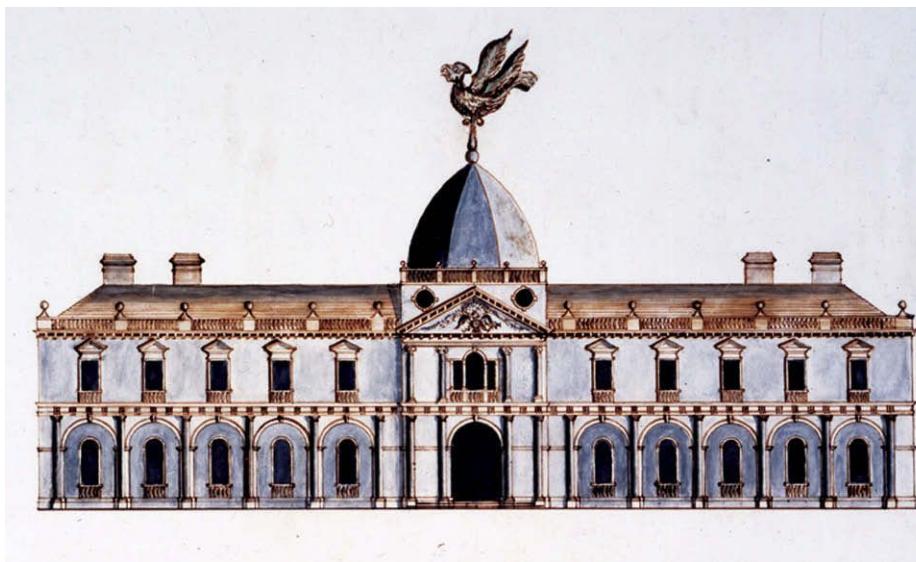
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A monumental, if crude, weathercock distinguishes this design by James Diamond, an amateur enthusiast who submitted a proposal for the so-called Congress House.



and preservation of many of these buildings. Our agency's portfolio might as well have included several buildings proposed by renowned architects, obscure amateurs, and even U.S. presidents—buildings that were ultimately never built.

The origin of the office of the Architect of the Capitol dates back to the setting of the Capitol's cornerstone by President George Washington in 1793. Three years earlier, the Residence Act had stipulated that Philadelphia would serve as the temporary capital for 10 years while a new city was built on the northern bank of the Potomac River near Georgetown. While L'Enfant delivered a plan for Washington, despite pressure from the commissioners, by 1791, he had failed to present a plan for the new Capitol. So the leaders of the new democracy took a suitably democratic approach to finding the appropriate design, sponsoring a public competition in March 1792.

While it's not known exactly how many designs were submitted, at least 13 men are known to have entered, and although some of those proposals are lost to time, 37 drawings still exist today. The evocative drawings exhibited in "Unbuilt Washington" demonstrate how each failed to capture President Washington's support and imagination—and why they didn't get built.

Would the Capitol Building still resonate in the world as the definitive symbol of representational democracy if it were built after James Diamond's design—one that featured what "Unbuilt Washington" curator G. Martin Moeller Jr. has described as a "screaming chicken" atop its unambitious dome? Diamond, an amateur architect, also proposed the same poultry for the President's House (today, the White House). It's no surprise that his design wasn't selected for that building, either.

Then, as is the case now, there were factors and influences beyond aesthetics that went into the decision making. Among them were politics, money (or lack thereof), personal preferences, and war—to name a few.

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William Thornton, adapted his original design—known as the Tortola Scheme—based on the feedback provided by President Washington and others on the prior submissions. Thornton's first attempt at designing the Capitol looked more like a mansion with wings. Learning of Washington's predilection for a dome (Washington thought it would give the Capitol "beauty and grandeur"), Thornton scrapped the Tortola Scheme and instead presented a design that featured a low dome. The proposal also incorporated the Neoclassical design that then-Secretary of State Thomas Jefferson preferred. (Thornton, a medical doctor and amateur architect, is credited as the first Architect of the Capitol, because his design for the Capitol was selected.)

More changes were made to Thornton's plan after a conference was held to discuss the design's constructability and floor plan. Jefferson—who had submitted his own design for the Capitol, which is on view in "Unbuilt Washington"—lobbied for a three-story House Chamber. Thornton acquiesced, but the concept later proved difficult to build. (After the British burned the Capitol Building in 1814, the design-by-

THE GUESTS WERE ASTONISHED BY WHAT THEY SAW. JOSEPH E. ROBINSON WAS SO MOVED, HE WAS COMPELLED TO WRITE SPOFFORD: "NOT UNTIL I STAND BEFORE THE JUDGMENT SEAT OF GOD DO I EVER EXPECT TO SEE THIS BUILDING TRANSCENDED."

conference approach was scrapped. A new plan for the House Chamber proposed by Benjamin Henry Latrobe, who was responsible for constructing the Capitol's south wing, was approved in 1815.)

The establishment of the Library of Congress flowed from decisions regarding the Capitol. In 1800, as Congress was preparing to move from Philadelphia to Washington, \$5,000 was appropriated to buy books for the use of Congress in its new home. The Library of Congress was thereby created, and it was housed in the new Capitol Building. The Library's collections continued to grow over the years, even after several fires destroyed portions of it over the ensuing decades. Following much debate and discussion, Congress authorized a design competition in March 1873 for a new library building and appointed a commission to select a plan.

Some of these designs were grandiose, such as Leon Beaver's palacelike proposal. There were some



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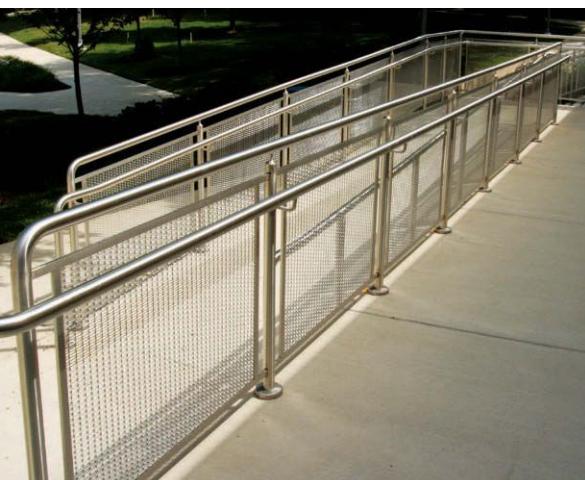
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culture



Top: Though architect Leon Beaver, who submitted this ornate proposal for the Library of Congress, was well-known in his day for works in Ohio, Kentucky, and elsewhere, many of his buildings are now lost to history.

Above: Alexander Esty, an architect largely known for designing churches in New England, submitted this Gothic Revival design for the competition to build the Library of Congress.

members of Congress who opposed the construction of a separate library building entirely, and instead advocated for an expansion of the Capitol Building to accommodate the growing collections. A strong proponent of a separate facility, the Librarian of Congress Ainsworth Spofford asked Architect of the Capitol Thomas U. Walter to estimate the cost of enlarging the Capitol for the library. Walter estimated the price tag at about \$4 million. Spofford used that estimate to justify funding a separate library, and, in 1886, Smithmeyer & Pelz's modified design—which was modeled in part on the Paris Opera House—was finally approved.

John L. Smithmeyer and Paul Pelz redesigned their entry many times, submitting Italian Renaissance schemes, Victorian Gothic schemes, and German Renaissance schemes. Their process reminds me of the early American quest to define ourselves. Our newly found freedom and independence was still fresh on our minds; we had yet to determine what style of architecture best defined us as a country. Regarding many of those design decisions, politics, money, and personal preference came into play once again.

The Library of Congress, housed in the Thomas Jefferson Building, was opened to the public on Nov. 1, 1897. On Nov. 25, more than 4,700 visitors toured the new Library during a special Thanksgiving Day open house. The guests were astonished by what they saw. Joseph E. Robinson was so moved, he was compelled to write

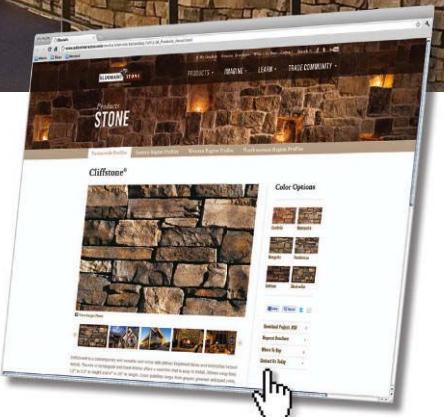




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Spofford: "Not until I stand before the judgment seat of God do I ever expect to see this building transcended."

Would he have been so moved to write those words by Alexander Esty's design? "Unbuilt Washington" shows plainly how the course of history might have been altered, had, for example, the Washington Monument been designed as a pyramid, or had our tribute to President Abraham Lincoln been a statue of the man standing atop a ziggurat. Life in Washington would be quite different if the National Mall were bookmarked by elevated highways. But the exhibit also demonstrates how the design history of the capital city affected Americans such as Mr. Robinson.

The early development of our federal city specifically fascinates me. "Unbuilt Washington" goes further: It includes more recent unbuilt work in the Southeast quadrant, Foggy Bottom, and downtown.

Two of these are especially intriguing. The first is the Dolphin America Hotel, designed by architect Doug Michels in 1989. He was rather captivated by dolphins and proposed various projects that would bring humans into closer contact with the aquatic mammals. While we continue to be intrigued by how intelligent dolphins are, we'll never know if Michels's idea was a smart one.

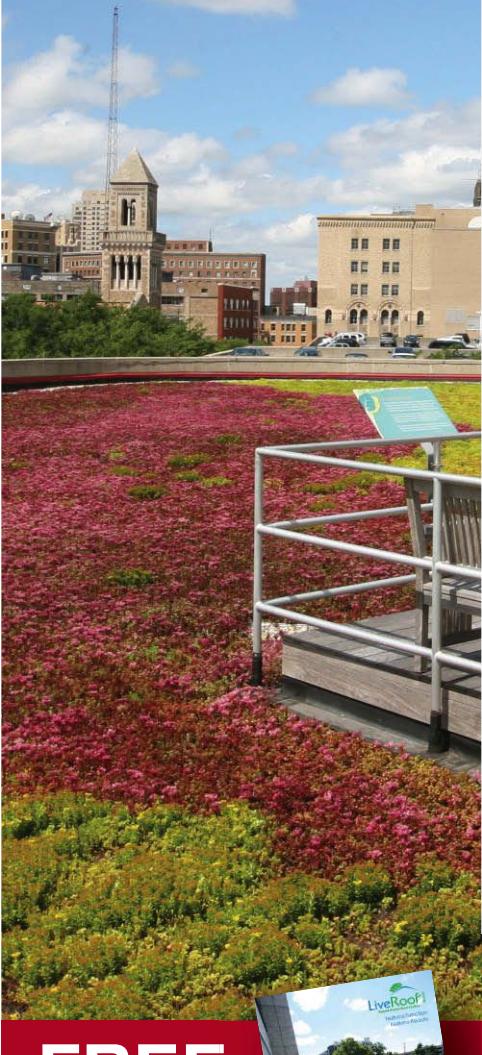
The second is the Washington Channel Bridge, proposed by Chloethiel Woodard Smith and Associated Architects in 1966 to connect the Southwest Waterfront to East Potomac Park. Imagined as Washington's version of Florence, Italy's Ponte Vecchio, this pedestrian bridge would have featured shops and restaurants, potentially altering the look and feel of these neighborhoods so dramatically that they might be unrecognizable today. I find myself a little disappointed that this bold idea was never built.

Woven throughout the exhibit are the "Nationals." (No, not the baseball team that led the National League East in April.) The exhibit captures our country's efforts to define itself through so-called "national" monuments, memorials, and buildings. The exhibit surveys designs for the National Mall, the National Cathedral, a National Museum, a National University, a National Aquarium—even a National Parthenon.

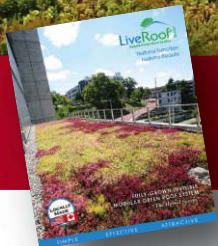
Despite the fact that the United States never built a National Parthenon or a dolphin center, I can't help but think that somehow we got it right. Yes, we occasionally veered off course, and the history of Washington, D.C., is punctuated with corrections, such as the McMillan Plan (1901) and the National Capital Planning Commission's Extending the Legacy Plan (1997). But even through the ebb and flow of public support, and notwithstanding the influence of politicians, politics, war, and money (or lack thereof), the nation has generally arrived at the right answers and the best design solutions for its capital.

I get a lump of pride in my throat whenever I fly back to Washington after some time away. Is there anything more majestic than seeing the Washington Monument appear outside your airplane window and having your eye wander up the great, green expanse of the National Mall to the gleaming dome of our Capitol Building? One of the best features of "Unbuilt Washington" is that it is set in Washington—the iconic, monumental, and inspirational Capital City. □

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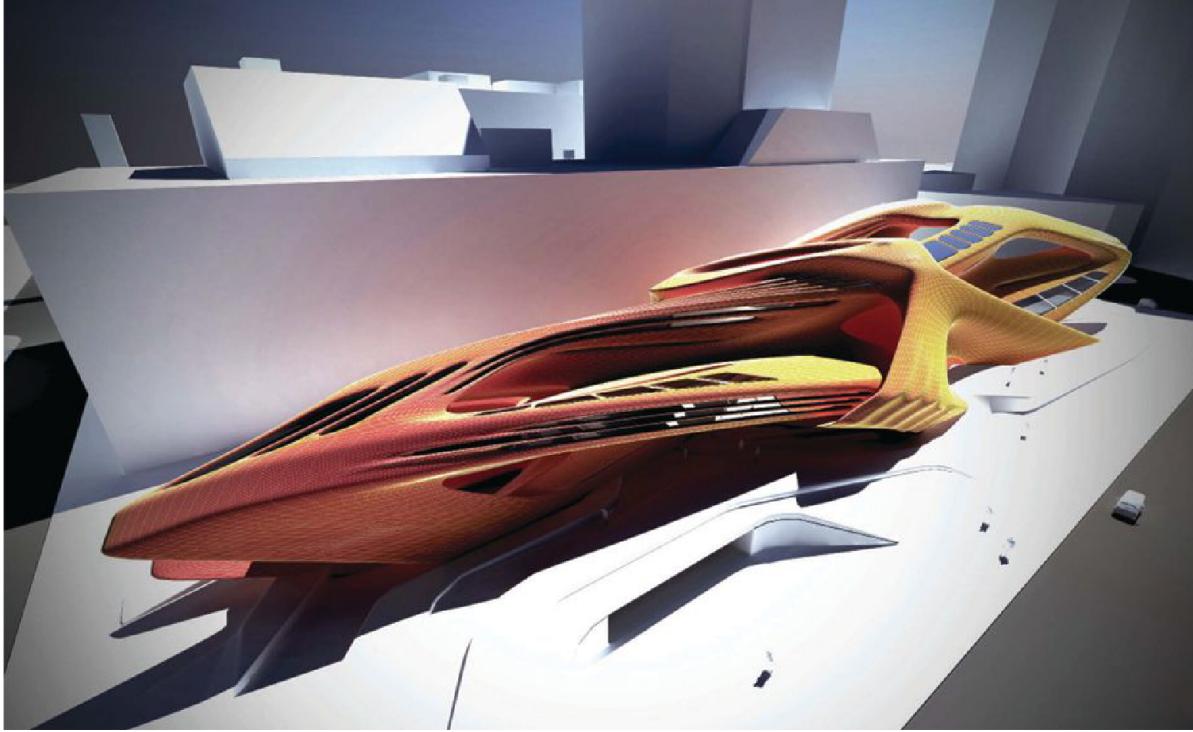
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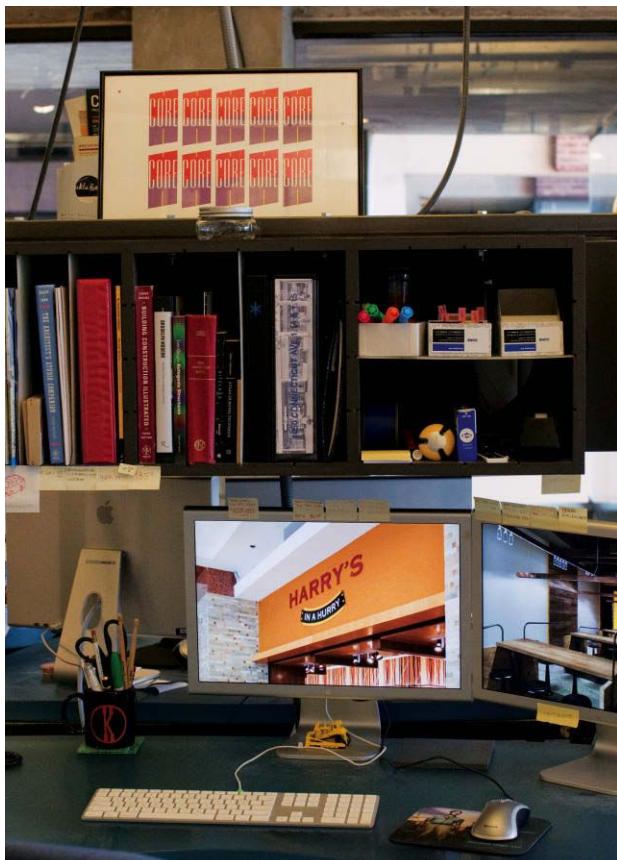
→ STUDIO VISIT

CORE

WITH PROJECTS ACROSS THE CITY, WASHINGTON, D.C.'S EVER-PRESENT CORE HAS PARTICIPATED IN BUILDING THE DISTRICT FROM THE GROUND UP.

TEXT BY KRISTON CAPP
PHOTOS BY JASON FULFORD





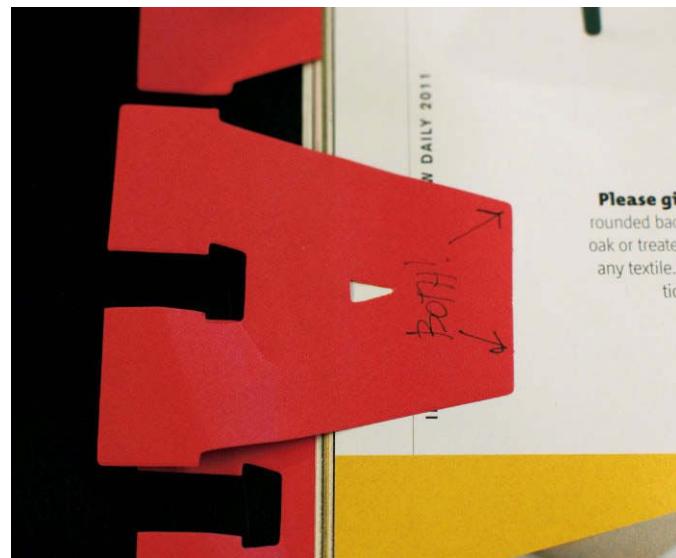
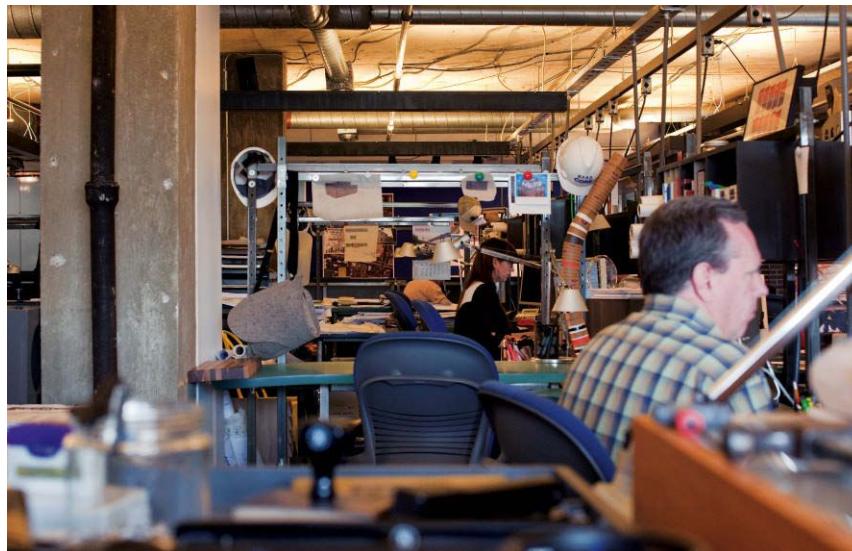
If Core feels optimistic about the economic recovery, one reason is that they've seen it all before. "We started in 1991, in the other recession," says principal Dale A. Stewart, AIA. "Our theory was that if we could survive during a recession, we'd know how to run a business." Though Core lost some staff during the recent recession—primarily to attrition—the firm is now on the upswing, with 17 staffers, and plans to add two or three more this year.

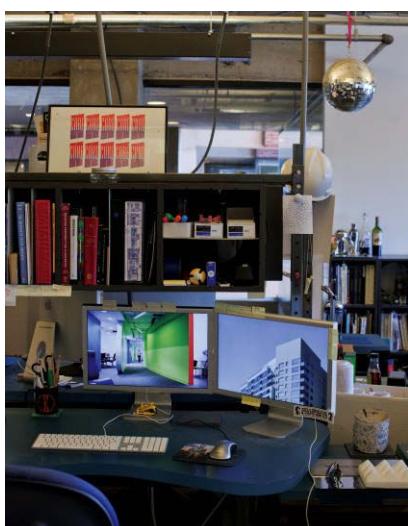
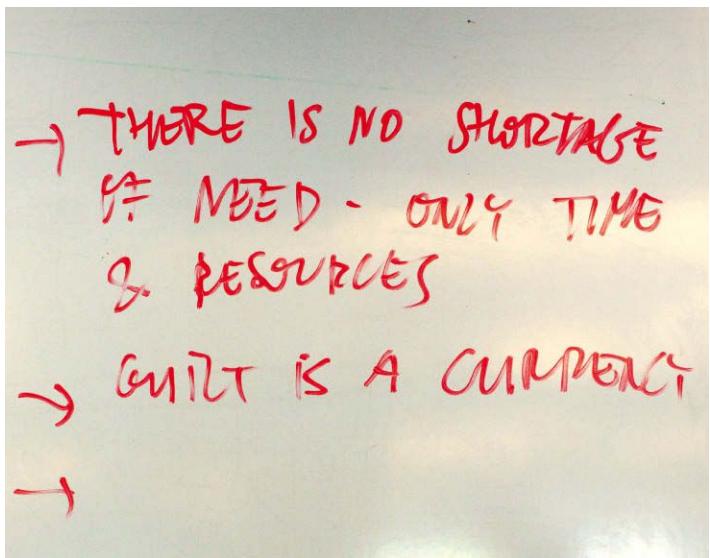
Core launched its practice in Washington, D.C.'s Dupont Circle neighborhood in 1991 but moved three years later to Georgetown, where the firm has been stationed ever since. Core's offices, which overlook the Potomac River, are located a few blocks away from the firm's first big project, a 17,000-square-foot marketplace for Dean & DeLuca, which is still a major fixture of Georgetown's retail corridor.

As the nation's capital and the seat of the federal government—and all its attendant industry—Washington, D.C., weathers recessions better than some municipalities. "I don't think it's truly recession proof, no. Absolutely no question, it's not," says principal Guy Martin, AIA (pictured at far left). "I do think we're luckier than a lot of areas. When we get these dips, we don't dip as far as other places." One price for the relative immunity to systemic shocks is the relative lack of access to serious booms. "We don't go as high up, either. We don't, by and large, have in Washington the scale of building in Chicago and New York" even in the best circumstances, he says.

Core has no specific area of emphasis: Its recent commissions include interiors for popular new D.C. hotspots such as Pearl Dive Oyster Palace and Againn as well as the ongoing renovation of the Mt. Pleasant Public Library in Northwest Washington. "It works because we have a bunch of very diverse, talented people, most of whom are multivalent," Martin says. "Almost everybody here can and likes to jump in scale and type of project."

Christopher Peli, one of the firm's designers, puts it a different way. "We're more like a band than a family," he says. "Everyone plays multiple instruments."





Some of the firm's larger projects take them out of the District proper. One unique challenge that a D.C. firm faces is balancing the requirements of three different municipalities in one relatively small area. "We just finished getting site-plan approval for a 485-unit mid-rise apartment complex unit in Arlandria that also has 50,000 square feet of retail," Martin says, referring to an area between Arlington and Alexandria, Va.

Building in D.C. is different—and not just due to D.C.'s Height Act restrictions. "Over time, they build out the box with greater density. It used to be the height limit with an 8.5 [floor-area ratio]. Over time that FAR has crept to 10, 10.5, 11," Martin says. "There's no room to maneuver."

"We don't want to get so big that we have to be departments," says Stewart (center left). Core's small size is key to its diverse portfolio. "We like that somebody can work on both a restaurant and an office building."

Stewart, 54, and Martin, 63, share an office and always have. Many principals might find that unthinkable, but the two say that the situation facilitates a dialogue about projects.

New developments in Washington have been spurred in part by forces outside D.C., which is not necessarily a bad thing. "There's a benefit to some degree of the outside world coming in [to Washington]," Martin says, noting in particular recent efforts by D.C. Public Library chief Ginnie Cooper, who brought a zeal for architecture from Brooklyn in 2006.

As much as developers from elsewhere may take credit for the recent growth in Washington, it wouldn't have happened were the city not undergoing an internal shift away from the traditional status quo. The city's progressive trajectory is reflected in its new buildings and interiors—and also in its food, fashion, and culture, Stewart says. "Even in the 20 years we've been practicing—we started and won some awards early on," Stewart says. "The jurors' comments were, 'This is very refreshing and exciting to see this kind of work happening in Washington, finally.'"

→ BEYOND BUILDINGS

Paving the Lawn

THE FINALISTS IN THE NATIONAL MALL DESIGN COMPETITION ARE RETHINKING HOW AMERICA CULTIVATES ITS FRONT YARD.



A rendering of the finalist design proposal from Diller Scofidio Renfro + Hood Design for the Washington Monument Grounds at Sylvan Theater in Washington, D.C.

IT IS BOTH HEARTENING AND A BIT FRIGHTENING to see the designs produced by the finalists in the National Mall Design Competition. The quality is generally so high, the ambition so vaunting, and the proposals offer up such a promise of eschewing the monumental for the natural that it makes you hope that this country will turn its front lawn into a display of the actual landscape we inhabit—one reshaped so as to set off the great markers of democracy that frame the space. I only fear that the winning designer will have to confront the reactionary forces that threaten any attempt to ask what we really mean by a monument and what kind of spaces should mark and make room for the values we share.

The competition is a private affair, organized by the Trust for the National Mall and supported by private individuals, foundations, and corporations. Its program comes out of the belief that this much-used but not-always-beautiful stretch of lawn deserves enhancements that will make it function in terms of both tourist and civic uses.

Almost all the designs selected as finalists suggest bringing back the wetlands that once occupied this area, and using natural grade changes to stage the way we approach the actual monuments. Only the scheme by AECOM and Snøhetta seems to create a barrier and to have recourse to an alien geometry, while Ken Smith Landscape Architect and Pei Cobb Freed & Partners's plan falls into more familiar modes of grid planning.

From Olin and Weiss/Manfredi to Gustafson Guthrie Nichol and Davis Brody Bond, and from Diller Scofidio Renfro + Hood Design to WORKac, the other firms all designed schemes that share sinuous waves of planting and water-shaping glades and places of respite within the Mall's axis. Several of the designs also hide amenities, ranging from bathrooms to theaters, underneath the rising or swerving landscape forms. I was hard-pressed to find fundamental differences between the designs.

The consensus, in other words, is that what the ultimate act of gridding the National Mall needs is a retrieval of the Edenic state it buried. Whatever we do there should enhance the grandeur of the great public space by using the picturesque effects native to landscape architecture. New structures must be built with or under the land. A variety of spaces and scales can be controlled not with a grid, but with continuous land forms and planting.

From these designs it is plain to see that landscape architecture in this country has gained the high ground. Now the hard part starts—not so much picking the actual winners and raising the \$700 million needed to turn their proposals into reality, as extending a design consensus to the public in order to avoid the reactionary insertions that have marred everything from the Vietnam Veterans to the World War II Memorials.

This is a vision of a better land. Let's build it. □

TEXT BY AARON BETSKY
ILLUSTRATION BY PETER ARKLE



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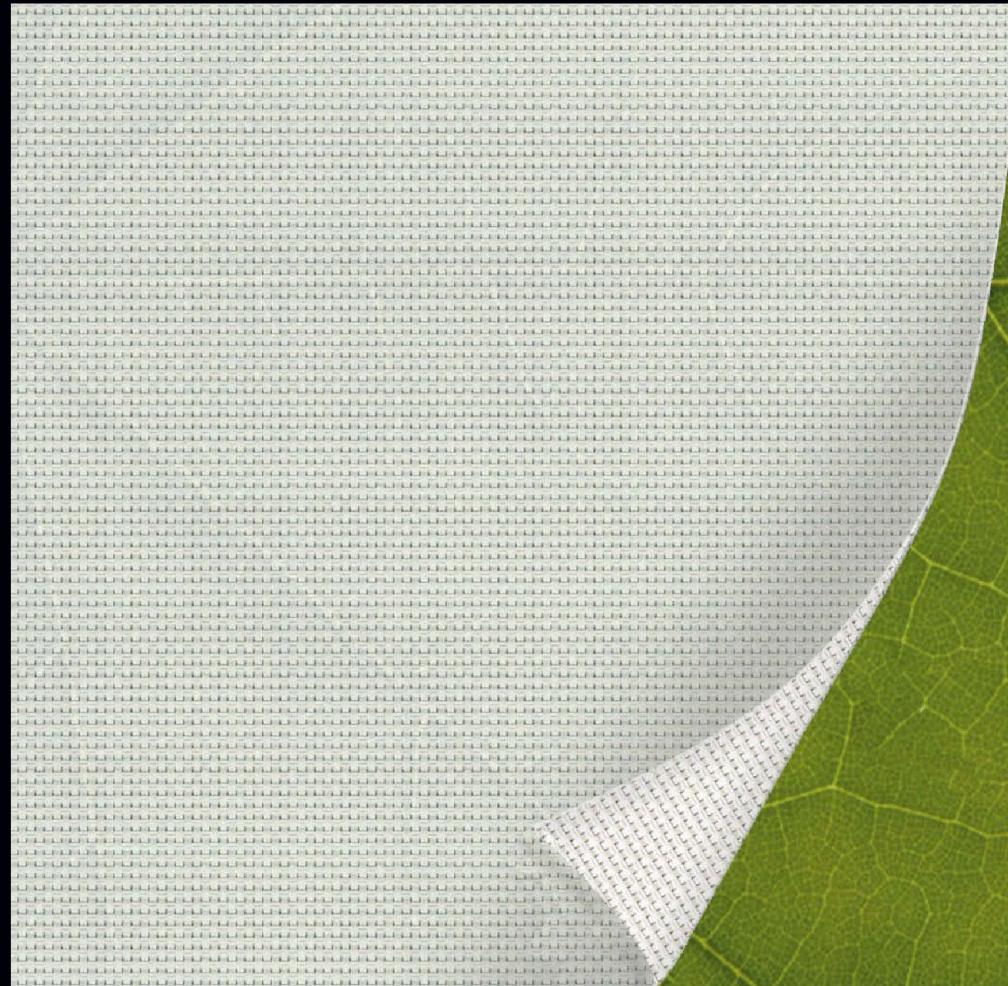
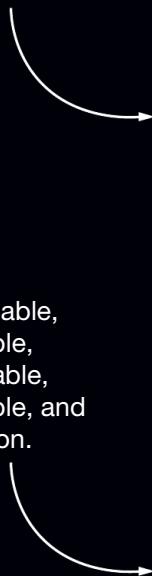
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STEVEN HOLL

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DURING THE COURSE OF HIS RISE FROM STARVING ARTIST TO GLOBAL SENSATION, 2012 AIA GOLD MEDALIST STEVEN HOLL HAS NEVER COMPROMISED ON HIS CEREBRAL, POETIC DESIGN PHILOSOPHY—EVEN WHEN HIS CLIENTS HAVE NO IDEA WHAT HE'S TALKING ABOUT.

TEXT BY JUSTIN DAVIDSON
PHOTO BY ART STRIEBER

FOR AN ARCHITECT who erects megalithic complexes of interconnected high-rises in China, Steven Holl, FAIA, sure spends a lot of time in his own head. Every project that issues from his studio comes bundled with an idea—some myth or metaphor, or scientific concept that he translates into an eloquent watercolor on a 5-by-7-inch sheet of paper. For the Chapel of St. Ignatius in Seattle, he dreamed up a collection of seven colored bottles of light in a stone box. That image evolved into a grouping of windowed volumes emerging from the chapel's low, flat roof.

"They wanted to cut it down to four or five," he remembers, with a satisfied smile. "The campus ministry said, 'No, Steven's concept is seven colored bottles, there are seven days in the week, and there shall be seven.'"

Holl sits at a conference table in his idea nursery—a sunny office overlooking the West Side of Manhattan, a view entwined with his history. Holl was the first architect to float detailed proposals for reusing the elevated railroad tracks that eventually turned into the High Line, which winds past his building. He also entered the competition to design Hudson Yards, the massive waterfront development that will one day block his sight line to the Hudson River. He professes no regret that both projects are proceeding without him.

"I'm delighted!" he says. "While others were doing the High Line, I was working on a horizontal skyscraper in Shenzhen, [China,] and I still get to walk on it from my apartment to my office."

Besides, he says, just because his designs won't be realized doesn't diminish his contributions. This is one of his core credos, and he enunciates it like a catechism: "It doesn't have to be built to be architecture. A play can exist without being performed. A

piece of music can exist without an orchestra playing it. The creative act is the most important thing."

Holl grew up in Bremerton, Wash., about an hour's ferry ride from Seattle across the Puget Sound. In that working-class town, the most interesting architecture he remembers was an immense hammerhead crane looming over the dock like some robotic dinosaur. He and his younger brother James (now an artist) turned the family's backyard into a construction site, mapping out model cities and building an assortment of refuges: a tree house, a two-story clubhouse, and a foxhole camouflaged by a rug covered in dirt and sod. "Several years ago, I gave a lecture in which I said that there are only four kinds of architecture: under the ground, in the ground, on the ground, and over the ground," Holl says. "And I realized, I was doing all of those when I was five, without knowing it."

In high school, he kept building. He fashioned complicated ductwork in his father's sheet-metal business, grabbing a broom whenever the union rep came around, since it was a closed shop and he wasn't a member. He also assembled hot rods. First came a '39 Chevrolet Coupe that he worked on for a year before he was old enough to get a driver's license. That car was his pride and joy—until he swapped it for a 1931 Model A Ford that he equipped with a 283 Chevy V8 engine. "I'd trade it, and build another one and trade that, and do another one. I had the fastest car in my high school."

Holl's life revolved around cars, football, and surfing, at least until he entered college in 1966, and put away childish things. "I decided to focus on architecture and art and philosophy. I got a '59 Volkswagen and quit thinking about cars. Just turned it off." Decades later, he designed a surf museum in Biarritz, France, and a sports center for Columbia University's chronically underperforming football team. "I've come full circle," he jokes. "Now I guess I have to do a drag race track."

As a student at the University of Washington in Seattle, Holl fell under the spell of the architectural historian Hermann Pundt, who guided students through a two-year survey, lingering for weeks on the works of Karl Friedrich Schinkel, Louis Sullivan, and Frank Lloyd Wright. Holl remembers the rest of the architectural faculty as "terrible, boring

professors," workaday technicians "who couldn't grasp larger ideas" and who nearly drove him out of the department in despair. It was not the last time that Holl would feel alienated from the world he had chosen. Fortunately, Pundt recommended him for a semester abroad program in Rome, which rekindled his zeal.

After graduating, he rattled his way to San Francisco in his dying Beetle and landed a job building models for Lawrence Halprin. He stayed five years, followed by a fertile year at the Architectural Association in London. When he returned to San Francisco, he moved in with a fellow architect, William Stout, and persuaded him to start selling some of the books that were overflowing the apartment shelves. That experiment turned into the now venerable bookstore, William Stout Architectural Books.

But Holl was restless, ambitious, and adrift. "I never really decided to move to New York," he says. "I came on New Year's Eve, 1976, and I just never used the return half of the excursion ticket." It was an inauspicious time for a talented young architect with minimal experience to hang out his shingle. The economy was stagnating, cities were disintegrating, potential clients were making for the suburbs—and, anyway, Holl had nothing but contempt for the period's incipient love affair with Postmodernism. He picked up adjunct teaching gigs at Columbia University, the Pratt Institute, Parsons the New School for Design, and the University of Pennsylvania. He bunked (illegally) on a plywood shelf above the entrance to his studio in an office building on West 21st Street. For 10 years, he had only tiny and rare commissions, and he spent his days in raptures of theory and speculative designs. "It was a long period of development," he reflects. "Very long."

In retrospect, Holl claims to be grateful for that extended professional drought. For one thing, it taught him to be patient. "Having a hard time is absolutely necessary. It gives you the strength to just blink and move on when a project gets canceled." Even now, he says, only about one in every 30 projects he designs gets built. "You really have to love the work for what it is." When he did get a small project, he had the leisure to fuss over every light fixture and door handle, until each little house or apartment became a perfect microcosm of his aesthetic.

"IF I HAVE A STYLE LIKE BLOB OR ZIGZAG, THEN THE PROBLEM CAN'T SHOW ME ANYTHING NEW. I TRY TO COME INNOCENTLY TO A PROJECT, FIND AN IDEA, AND LET THAT LEAD ME INTO THE POSSIBILITIES. THE MEASURE OF GOOD ARCHITECTURE IS IN THE EXPERIENCE—IN THE QUALITY OF SPACE, OF LIGHT, SMELL, SOUND, AND TEXTURE. A FIVE-YEAR-OLD CAN GO INTO THE SPACE AND BE EXCITED ABOUT IT."

—STEVEN HOLL

Holl also cultivated the unrealistic—but ultimately useful—self-assurance of an artist who had never become accustomed to pleasing clients, because he hardly had any. Finally, in the late 1980s, a Dallas couple that had seen Holl's work in an exhibition at the Museum of Modern Art asked him to design their house and gave him the instruction that every architect longs to hear: Do whatever you want. What Holl wanted was a different site. "On my first visit, I said, 'That site's too tight. You're going to have to put the swimming pool on the roof.' Next morning, she took me around, and I said, 'There: Tear that house down and it will be a great site.' And that's what they did. That's an ideal client."

The Stretto House, as Holl called the Dallas home, is a spectacularly detailed and intricate work based on a classic of modern music, Béla Bartók's *Music for Strings, Percussion, and*

Celesta, in ways that could be evident only to scholars equally comfortable in architecture and in music. By the time he hit maturity as a practical architect, he had been teaching for nearly 20 years and refined an approach that hunted for specific, discoverable meaning in each design. Many architects attach verbal labels to visual ideas, but in Holl's case, pithy, sometimes mystifying titles such as "Sliced Porosity Block" or "Horizontal Skyscraper" have a precise task: to unify disparate elements, resolve contradictions, seduce clients, and generate distinct spatial experiences.

Those ideas can hit him immediately on his first visit to a site, or else they get collectively squeezed out of meeting after laborious meeting. Either way, Holl distills the idea into a sketch that is a combination of seed, marketing tool, and artifact. He has amassed more than 10,000 of these bejeweled pages, a

record of intellectual ferment preserved in a format that can never become obsolete.

"The watercolor informs the logic of the design at the level of fantasy," says the architectural historian and critic Kenneth Frampton, Assoc. AIA, a longtime champion of Holl's. "It's a very oblique approach, but his charismatic enthusiasm can carry things forward. He has enormous charm."

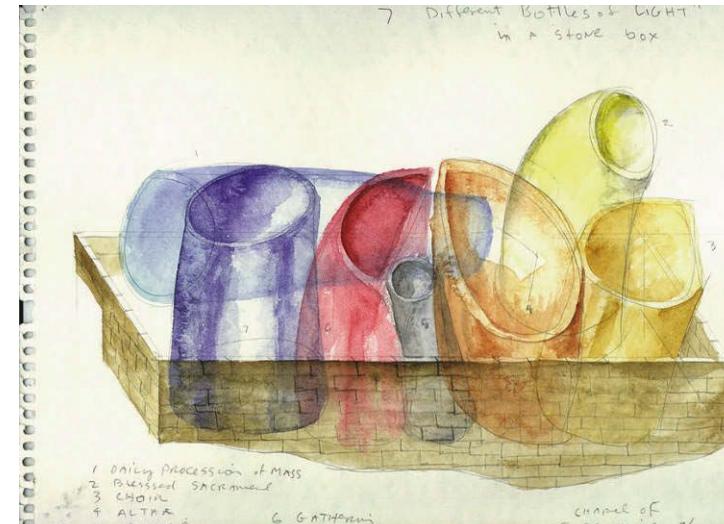
Holl knows that conceptual clarity is a luxury—that most clients (and most architects, for that matter) are less interested in philosophical abstractions than in ensuring adequate plumbing, breathable air, and honest budgets. He recognizes, too, that even as he and his associates grope their way toward revelation, they sometimes emerge with an idea so exquisitely recondite that it's practically incomprehensible. This fact disturbs him not at all. He mentions a pavilion

Horizontal Skyscraper in Shenzhen, China



ABOVE: IWAN BAAN; FAR RIGHT: PAUL WARCHOL

Chapel of St. Ignatius in Seattle, Wash.



he added to a 19th-century brick building in Amsterdam, a small project that boasted not one but two generative analogies: the composer Morton Feldman's hauntingly abstract 80-minute work for cello and piano from 1981, *Patterns on a Chromatic Field*; and the mathematical concept of a Menger sponge, which yields a cubical solid shot through with cubical voids.

"The clients went along with the project, liked it and built it, but I don't think they ever really understood the connection to Feldman or the Menger sponge," he says serenely. "I think it was Wittgenstein who said that ideas are like ladders: When you get there you can kick it away and move on." Which is to say that what matters in the end is not what thoughts brought forth the building, but what the space feels like when you're in it.

Holl's breakthrough project, the one that finally made him a celebrity beyond the rarefied world of his academically inclined peers, was Kiasma, the contemporary art museum in Helsinki. He won the job in an open competition in 1993 (more than 25 years into his career), with a design that challenged the jury to understand his subtle and unorthodox tunnel of light. Somehow, despite all of the hands-off theorizing, he had developed a set of profound intuitions about how light clings to a ceiling or coats a wall, how enclosing a volume of air can endow it with sensual magic, and how soothing a touchable surface can be. That emphasis on the immediate, physical experience of architecture—what Holl calls its "phenomenology"—would seem at odds with his intellectual approach. But you don't have to spend much time in Holl's company to start picking up his emotional connection to his designs. "My buildings are my children, and I go and visit them," he says. To prove it, he takes out his smartphone and flips through snapshots of himself, posing proudly with his architectural progeny: Simmons Hall, a

student dormitory at MIT; the Nelson-Atkins Museum of Art in Kansas City, Mo.; his latest complex in China.

A tactile relationship with architecture, a love of glimmering color, a contemplative sensibility, a lyrical sense of the kinship between space and music—these qualities characterize Holl's work more than any stylistic habit or signature move. "If I have a style like blob or zigzag, then the problem can't show me anything new. I try to come innocently to a project, find an idea, and let that lead me into the possibilities. The measure of good architecture is in the experience—in the quality of space, of light, smell, sound, and texture. A five-year-old can go into a space and be excited about it."

The real function of those watercolors, then, is to keep the lengthy design process—so full of puzzles and compromises—grounded in a visceral impulse. Holding a brush between the fingers and using the bristles to spread colored water on a piece of paper is a physical act that links even the most immense and technologically advanced structure to the architect's nerve endings.

Holl's virtuosity with light makes the challenges of being his client worthwhile, says Joan Camins, a former architect who commissioned him to design a weekend house on the East End of Long Island. "We wanted him to create a work of art, but we also needed to make sure we had a space we could use."

The process involved what she euphemistically calls "lively discussions" over minutiae such as the size of a bed and the length of a tub. In the end, she says, "it works the way a house should, and you get these wonderful surprises as the light changes." She rhapsodizes over the way the afternoon sun slides through a small window onto a stairwell, turning a nook into a chamber of gold.

Holl's physical connection with space and his sense of detail have been challenged

lately by projects so huge that they transcend even the architect's ability to grasp them completely. Sliced Porosity Block, a ring of towers dancing wildly around a public plaza in the Chinese city of Chengdu, encompasses more than 3 million square feet. "When a building gets that big, it's very hard to experience it at all," Holl admits. "I spent six hours there recently, and there were still areas I didn't get to."

It's with a mixture of intense admiration and sheer puzzlement that Kenneth Frampton has watched Holl try to translate his private eureka from intimate, postcard-sized paintings into concrete mountains in China. "He's a romantic person, and his energy comes from strong intuitions," Frampton says. "He's a very positive force in American architecture—the Nelson-Atkins Museum is a pretty extraordinary invention in how to extend the classical building without impinging on it. But sometimes the work goes completely out of control: the Sliced Porosity building has turned into a kind of monster."

You could take that last remark as a backhanded compliment—after all, at 65, Holl is still experimenting, still taking risks, still showing no signs of complacency or fatigue. His firm enters a dozen competitions a year, winning some, losing more, and moving on to the next as relentlessly as the teenaged Holl went through souped-up cars. Architecture never gets easy, and he acknowledges that the pressures of constant travel and total absorption in work helped end both his marriages.

But Holl is already thinking excitedly about a fistful of new projects—some of which will, in all likelihood, consume much of his time for the next year or two and then not pan out. He smiles at the prospect. "I love it," he says. "I'm like an old football player who still likes to go out there and smash himself against the line." □

Stretto House in Dallas, Texas



Simmons Hall in Boston, Mass.



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VINCENT JAMES ASSOCIATES ARCHITECTS

From left to right:
Nat Madson, Megan Madland,
Eric West, Emma Huckett,
Jennifer Yoos, AIA, Nate
Steuerwald, AIA, Nathan
Knutson, AIA, Tim Ogren, Karen
Lu, AIA, Vincent James, AIA,
Dzenita Hadzimerovic,
and Paul Yaggie, AIA.
(Jay Lane, AIA, and
Kai Salmela not pictured.)



AIA
**FIRM
AWARD**

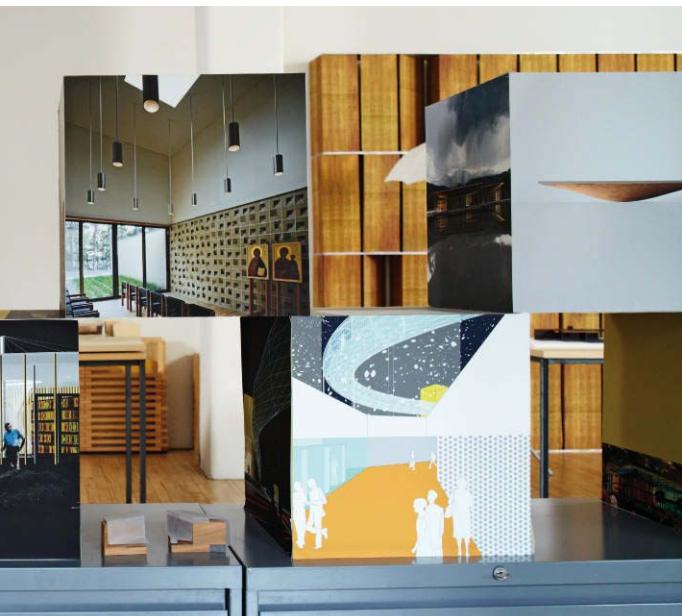


TEXT BY JEFFREY LEE
PHOTOS BY MARK MAHANEY

OBSESSIVE, IN A GOOD WAY

MINNEAPOLIS-BASED
VJAA BOASTS AN
INTENSELY RIGOROUS,
RESEARCH-DRIVEN
APPROACH THAT
ROOTS EVERY PROJECT
IN ITS CONTEXT.





HERE ARE SOME of VJAA's current projects: a flatwater rowing venue for the 2015 Pan Am games outside of Toronto, a Habitat for Humanity house in Detroit, a plaza expansion for the University of Minnesota's Weisman Art Museum, and a renovation of a 1960s Brutalist house in Minneapolis.

Indeed, since the firm's founding in 1995, VJAA has refused to be typecast by a certain style of architecture, type of building, or scale of project. Based in Minneapolis, the firm has consistently pursued a diverse body of work around the country, says Jennifer Yoos, AIA, 47, one of the firm's three principals. "We never really had a local practice that emerged and became a national practice," she says. "We were doing a few local projects, but largely practiced projects all over the country from pretty early on."

One of VJAA's first commissions, the Type/Variant House in northwestern Wisconsin, marked a formative moment in the firm's development. The house's design, conceived as a collection of wood-framed, copper-clad volumes, emerged after extensive conversations with the client, who had an interest in collecting art objects in series, says Vincent James, FAIA, 58, the firm's founding principal. "Everyone came to know us through that single project, and expected us to simply reproduce that as a style," he says. "We were very, very committed to not doing that."

Instead, VJAA continued to innovate with a variety of museum, institutional, and university work, winning six Progressive Architecture awards along the way. The firm approaches every scheme, regardless of budget, location, or type, with the same standards for design excellence, Yoos says.

VJAA's research and collaborative relationships help tailor projects to a client's needs and to a site's environmental and cultural context. For one of its most celebrated projects, the Charles Hostler Student Center at the American University of Beirut in Lebanon, the firm observed how occupants of the region's buildings congregated in different microclimates during the day—using lower shaded spaces when the heat was stifling or seeking cool rooftop breezes at night, for instance—and similarly designed the center to maximize those diverse microclimates. "We're always thinking about how ... [environmental ideas] can inform the building, and make it a condition of its own place and unable to be reproduced anywhere else in a specific way," James says. "We call it radical localization."

To foster its collaborative spirit and the development of conceptual ideas, the firm has stayed relatively small. It currently employs 14 designers and architects, down from a peak size of 22. Though Yoos thinks that one day the firm could employ as many as 40.

VJAA has evolved alongside Minneapolis's burgeoning design community. "Minneapolis culture is very arts—culture oriented," Yoos says. "A lot of people are very curious here and open. And that influences the design community, and that's partly why there are so many great design firms here."

Nevertheless, in 2002, the partners, who had long heard that they must have a New York or Boston branch to be considered for top-tier projects, decided to open a Boston studio. The venture lasted a year. "We really didn't like being divided that way," Yoos says. "We felt we were much more productive being in one place."

In 2003, the firm upgraded its Minneapolis digs. Located in a traditional office downtown that reinforced staff hierarchies, VJAA moved to an open studio space in an old textile warehouse that boasts tall ceilings and great light. It's ideal for testing material fabrications, mock-ups, and ideas about daylighting, Yoos says. "We model all the time, and we build iterative models and studies."

The studio's main entry area is used for presentations, but also as a working area around a projector. "It evolved out of our way of working with physical models, where we would stand around a table and talk about a project and develop little sketches or quick studies," Yoos says. "When we became really excited about digital tools, we started to use them in similar ways."

VJAA first explored digital fabrication with its work on the Minneapolis Rowing Club in 1998. More recently, for an exhibit at Eero and Eliel Saarinen's Christ Church Lutheran in Minneapolis, the firm designed a self-supporting, reconfigurable wall that further explored molded-plywood technologies used by the Saarinens' collaboration with Charles Eames, but advanced them using digital fabrication. "Something we're really interested in is this trajectory of modern design as being continually informed by new technologies and new ideas," Yoos says.

"We also see the developments in technology as a cultural process," adds managing principal Nathan Knutson, AIA. "So the radical schisms that people want to portray in the development of new ideas is something that's not necessarily as interesting as looking at how technology evolves and grows out of culture." □

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Mosaic

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Basilica of the National Shrine
of the Immaculate Conception

Washington, DC

Architectural Uplight

Design Office
Moed De Armas &
Shannon Architects

New York, NY

Custom Historic

Old House Of Delegates Chamber
Maryland Statehouse

Annapolis, MD

Standard Downlight

Main Pavilion
Bethel Woods Center for the Arts

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GEHRY'S PROJECT DESIGNER.



AIA
**25-YEAR
AWARD**





TEXT BY ALEX HOYT
PHOTOS BY ALEX FRADKIN

IN 1977, as he surveyed the gambrel-roofed Dutch Colonial bungalow that he would remodel into his seminal Santa Monica, Calif., house, Frank Gehry made a list of the property's pros and cons. Among the positives: the green asphalt shingle roof, the pink asbestos shingles, the plywood walls in the den, the corner lot location, the row of tall Lebanon cedars along the property's north line, and a giant euphorbia cactus in the backyard. He noted only one downside: "The block is filling up with apartments."

Gehry dubbed the structure, which he

purchased with his wife, Berta, "a dumb little house with charm," and then proceeded to wrap it with the sort of corrugated aluminum associated with airplane hangars, accentuating the corners of an addition with convex wood-framed skylights. And he used chain-link fencing to connect the new metal sheath on the exterior of the second story to the old pink shingles, the effect of which was somewhere between a batting cage, a chicken coop, and Stalag-17.

The newly transformed house, the only two-story structure on the block, seemed out of place and out of time. It was like finding a runway dress by Pierre Cardin on the rack at J.C. Penney. While the critics gushed—"Perhaps the most significant new house in Southern California in some years," wrote Paul Goldberger in *The New York Times*—the neighbors bristled. Gehry tried to explain that his industrial aesthetic was no different from that of the campers and boats that sat in front of their houses. His efforts were to no avail. One neighbor threatened to sue. Another vowed to have Gehry jailed by the city's building department.

Paul Lubowicki, then a 23-year-old project designer fresh out of Cooper Union, was

on site one day when a car pulled up. As he recalls, "This guy stopped me and said, 'Are you working on this house?' I said, 'Yeah.' He said, 'It looks like a Tijuana sausage factory.' And he drove off. It was so demoralizing."

The Santa Monica house was the first project Lubowicki worked on when he arrived in 1977 at Frank O. Gehry & Associates, and for three months he was the only person collaborating on it with Gehry. "He gave me the famous sketch on yellow paper that showed the elevation," he says, referring to Gehry's initial rendering. "So I made the model from the sketch. The first thing Frank did was take a knife and cut the entryway. All of a sudden I got tons of sketches from him. ... It was the most kamikaze stuff."

But it was the pace of Gehry's sketching that seemed radical to Lubowicki, not the use of industrial materials. "It was just part of the vocabulary," he says. Gehry had gained fluency in this workmanlike dialect by designing three unrealized residences in the mid-'70s, collectively known, due to their appearance of being under construction, as his "sketches in wood." The Gunther House, situated on a bluff overlooking the Pacific, was conceived with chain-link segments euphemistically called

"shadow mesh." The Wagner House, perched on a Malibu hillside, featured a corrugated metal envelope. And the Familian House comprised two stucco structures skewered by a partially exposed wood walkway.

Such rawness arises from Gehry's belief that "a structure in process is always more poetic than a finished work." And so, with his own house, he stripped the interior walls to their wood studs and joists, exposed the electrical wiring and light bulbs, and retained the asphalt floors in the kitchen-cum-dining room, where the driveway had been. "It was a problem when it was hot," Lubowicki says, referring to the asphalt. "But refining things is not his style." When Gehry wanted a skylight in the upstairs bathroom, he hammered a hole in the roof, then covered it with a glass pane and sealant.

The tension between the unrefined addition and the quaint bungalow led critics to classify it as an early work of deconstructivism.

the space. Two pieces of Gehry's Easy Edges furniture, a chair and a table, flank a rarely used white brick fireplace, and above it hangs Ed Ruscha's photograph of the back of the Hollywood sign. People tended to congregate in the kitchen and dining room, Lubowicki recalls. The living room "wasn't comfortable," he says. "But it was a really interesting space to be in."

The house bears a painterly influence—no surprise, given how Gehry socialized with the Los Angeles art scene. The architect acknowledges Robert Rauschenberg's collages as an influence on his integration of materials. He sought to evoke the multiple perspectives of Marcel Duchamp's "Nude Descending a Staircase" in his designs for a corner skylight, which seems to "twist" as you walk around it. When he first saw the original house's kitchen window, he recognized "the ghost of cubism" trying to escape.

Indeed, the implied motion conveyed by

center for Rouse—and own such an avant-garde house. Gehry responded, "I have to earn a living." DeVito said he didn't think Gehry should take on work that didn't interest him, and the two agreed to part ways. The following Monday, Gehry scaled back the size of his firm. Glorious international commissions followed, though not immediately. His Pritzker Prize was still years away.

I ask Lubowicki whether the Santa Monica house was the turning point of Gehry's career. He pauses. "There were a lot of turning points," he says. "The cardboard furniture, the Davis house, the Whitten house, Bilbao. He's like Matisse."

Despite the house's iconic stature, Lubowicki stresses its intimacy. "It was a very casual place," he says, recalling how he spent time there entertaining clients and dropping off Gehry's older son, Alejandro, after school.

When I spoke to Paul Goldberger, he told me that the house has a "way of being both

GEHRY HAS OFTEN REFERRED TO THE HOUSE AS HIS ARCHITECTURAL "LABORATORY," AND HE HAS CONSTANTLY TINKERED WITH IT. INDEED, HIS APPROACH TO ARCHITECTURE HAS CHANGED DURING HIS YEARS THERE, SO MUCH SO THAT ONE WRITER DUBBED IT "THE HOUSE THAT BUILT GEHRY."

Philip Johnson included Gehry in an exhibition of such projects that he organized at the Museum of Modern Art in 1988, but Gehry resisted the label.

Ironically, one of Gehry's earliest inspirations for his houses came from a lecture by Johnson that focused on a pure architecture that might be called the antithesis of deconstructivism. The world's greatest structures, Johnson said, were single rooms: the Blue Mosque and the Hagia Sophia in Istanbul, and Chartres Cathedral south of Paris. A solitary chamber was the closest an architect could come to the purity of an artist's blank canvas.

The house did prove to be an ideal canvas for Gehry, and a closer approximation of Johnson's idealized single room than the house-within-a-house structure would imply. The chain-link fencing, sitting atop the metal facade like the ramparts of a castle, functions as a "bridge," Lubowicki says. Inside, in the second-story master bedroom, the glass top of a table doubles as a kitchen skylight. "There's no privacy there," he says. "Basically, the whole house is a big room."

At the center is the living room, which doubles as a sort of art gallery. A glass cube by Larry Bell, 6 feet on each side, once dominated

cubism is an apt metaphor for a house that has always been fluid in its development—dynamic and unfinished. Gehry has often referred to the house as his architectural "laboratory," and he has constantly tinkered with it, most significantly in a 1991–93 remodeling in which he created separate bedrooms for his growing sons, installed a lap pool, covered the exposed ceiling beams with tidy wood battens, and renovated the garage into a guesthouse.

Gehry's approach to architecture has changed with the house, so much so that one writer dubbed it "the house that built Gehry." In his introduction to the book *Experimental Architecture in Los Angeles*, Gehry writes that "young designers have to choose between being subsumed into the system"—designing large commercial projects—"or surviving on such crumbs as garage remodeling." When he began remodeling his house, his portfolio was a schizophrenic mixture of both—a bland mega shopping center, a trapezoidal artist's studio.

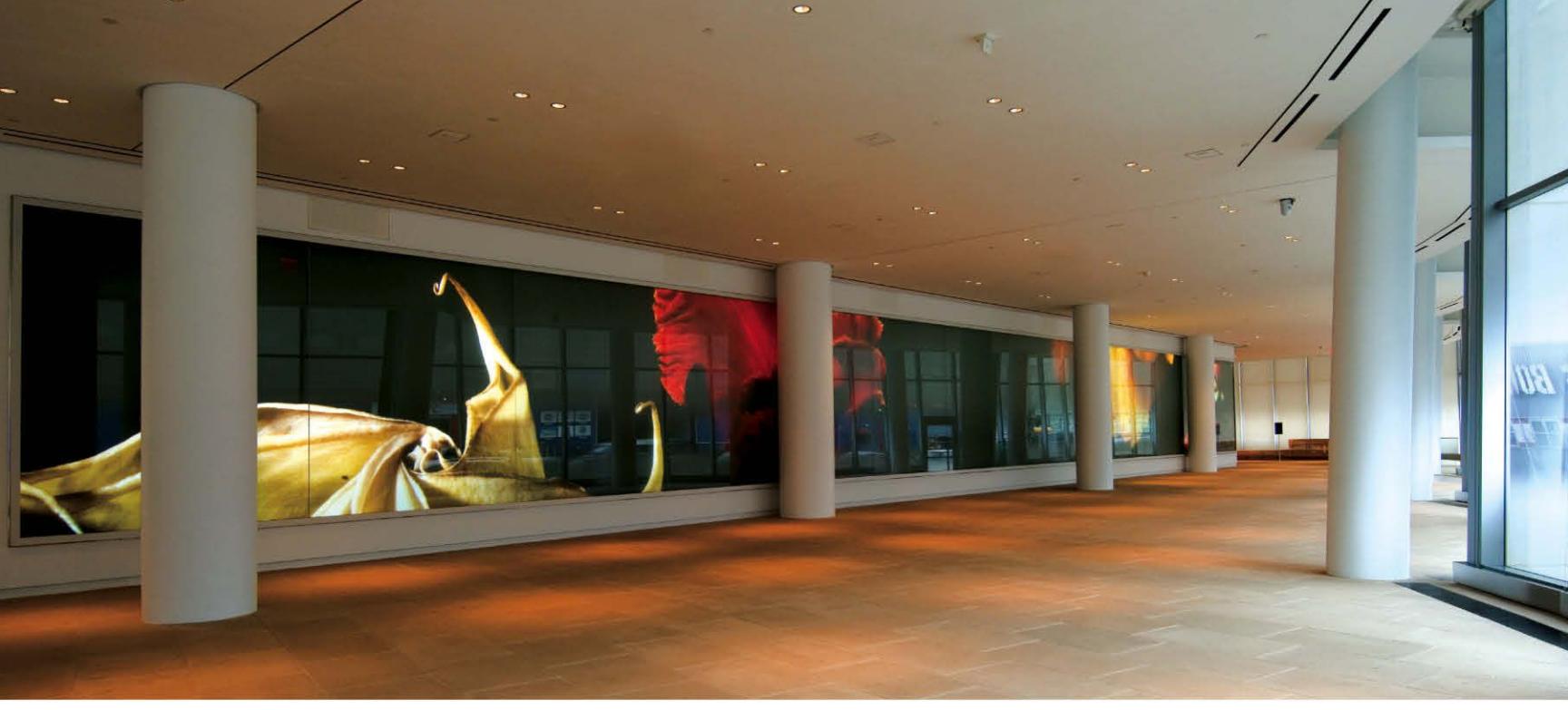
In 1978, Gehry had one of his commercial clients, Matt DeVito, the president of the Rouse Company, over for dinner. DeVito marveled at how an architect could be interested in his project—Gehry was designing a shopping

dramatically different and yet not disturbing. It's surprisingly comfortable and civilized and serene, even though you couldn't call it conventional."

As the house's rawness has waned, so too has Gehry's tempestuous relationship with his neighbors. Long ago he stopped yelling at them and instead began trying to explain his intentions. "It's sort of childish not to," he admitted in one interview.

And what were those intentions? In his submission portfolio to the AIA, Gehry writes, "I agonized about the symbols of the middle class to which I belonged. ... I dug deep into my own history and education for cues and clues and then followed my intuitions." In light of his history—he attended night school and held a job as a truck-driver—the house seems a quirky homage to blue-collar life. His comments about the "smugness of middle-class neighborhoods" simultaneously makes it seem like an iconoclastic mockery of suburban America.

Thirty-four years after its first remodeling, the house seems to present both perspectives at the same time, not unlike a cubist painting. A house imbued with such complexity and paradox must be a hard thing to build. And a hard thing to explain to your neighbors. □



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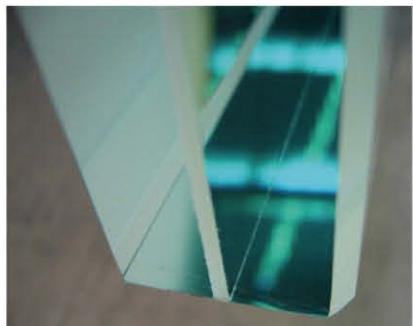
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AIA
**HONOR
AWARDS**



41 Cooper Square

New York
Morphosis Architects

Based in Culver City, Calif., Morphosis Architects designed a new academic building for the Cooper Union for the Advancement of Science and Art to help foster cross-disciplinary dialogue between the college's art, architecture, and engineering faculty and students. A vertical piazza—the central space for informal meetings and creative exchanges—forms the building's core. An undulating lattice envelops a 20-foot-wide grand stair that rises four stories through the skylit atrium.

Jury: "41 Cooper Square is so optimistic and wonderfully celebratory as you move through it. ... This has a spirit and aura to it that's extremely hard to capture and goes beyond most buildings."

Client: "Our whole educational process at Cooper Union is aimed at nurturing creativity and innovation, and so there is no question in my mind that that is where Cooper Union will make an extraordinary contribution. ... [We wanted] a space that would in fact inspire students, a space such that faculty and students, when they wake up in the morning, one of their first thoughts will be, 'I can't wait to get to that building.'" —former Cooper Union President George Campbell Jr., as quoted in the alumni magazine *At Cooper Union*





The Standard

New York
Ennead Architects

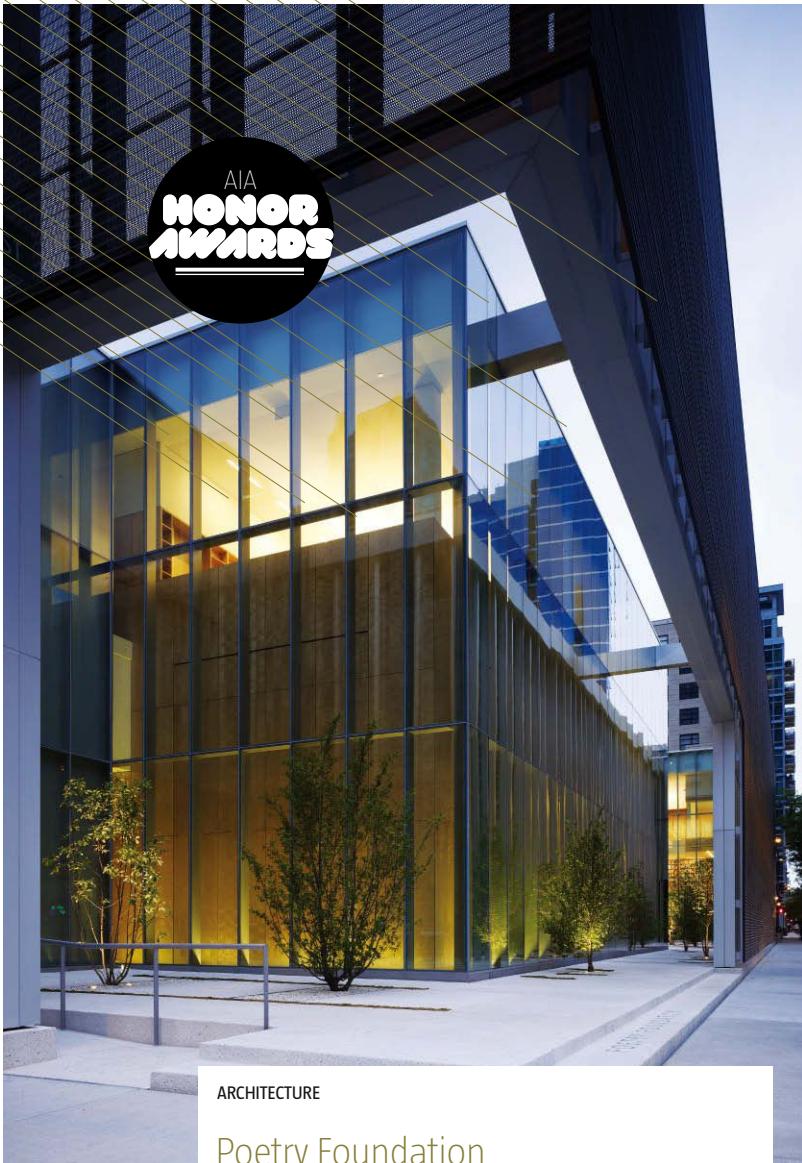
Designed to allow the High Line to pass beneath it, the 18-story Standard hotel was constructed using sculptural piers that raise the building 57 feet above the street grid. New York-based Ennead Architects accentuated the hotel's distinctive presence with a central "hinge" that divides the structure's two slabs.

Jury: "The building addresses the urban scale as a tower relating to the High Line [and the Hudson River]. ... There is clarity in the choice and articulation of materials and a sense of restraint, though the end result is one of high visual impact."

Client: "I usually renovate older buildings, and this was ground-up construction. Add to that the matter of the High Line and it was a unique challenge ... We had to be sensitive to this new landmark. It tramples through our site, but it also *defines* it. That said, we wanted to not be overly shy or reverent toward it. Whatever we put up there would have to jump the train tracks." —André Balazs, owner, as told to *Vanity Fair*



LEFT: IWAN BAAN; RIGHT: JEFF GOLDBERG



ARCHITECTURE

Poetry Foundation

Chicago
John Ronan Architects

Designed by Chicago-based John Ronan Architects, the Poetry Foundation features a performance space, set against the backdrop of a garden, where poets read their work. Passersby can glimpse alluring views of the building's interior through perforations in the outer layer of oxidized zinc.

Jury: "This building unfolds as it is experienced and is sublime in its stillness and detailing. ... From the street, one is seduced by its secrecy and, upon entering its crafted inner court, the project is revealed much like a poetry reading."

Client: "The Poetry Foundation wanted this building to be, all at once, a visual celebration of the art form, a permanent home for the foundation and its magazine, *Poetry*, and a place where the public could experience poetry in immediate ways. John Ronan has given us all these in a building that is itself a metaphor for the way a poem works. It has been embraced by poets and poetry lovers as a major addition to Chicago's vibrant cultural community."

—John Barr, president, Poetry Foundation



LEFT: HEDRICH BLESSING; RIGHT: JIM STROUP



ARCHITECTURE

LumenHaus

Virginia Tech University

The LumenHaus structure, designed by Virginia Tech for the 2009 Solar Decathlon, demonstrates how pursuing net-zero energy use need not sacrifice design. It generates more power than it uses over the course of a year and adjusts to climatic changes and user needs with automated systems.

Jury: "The creative use of materials and the flexibility of its [the house's] components quickly respond to changes in the environment. ... The interior is cleverly designed with comfortable if compact spaces, compatible materials, and a rational and clear layout."

Client: "There's been a huge shift in architectural education. Design/build efforts like the Rural Studio [at Auburn University, in Alabama] and Studio 804 at Kansas [University of Kansas] started something that began to catch on at other schools. The Solar Decathlon got a lot of schools involved. ... The architecture programs [also] began leading universities in collaborating. The LumenHaus team at one point had about 10 departments and four colleges working on it. It was led by the architects." —Scott Poole, AIA, former director, Virginia Tech's School of Architecture + Design

Pittman Dowell Residence

La Crescenta, Calif.
Michael Maltzan Architecture

The Pittman Dowell Residence was designed by Los Angeles-based Michael Maltzan Architecture. The seven-sided structure was inspired by a geometric series of interlocking polygons, and features living spaces that enclose an irregularly shaped outdoor room.

Jury: "The house acts like an optical instrument with staged views of the surrounding landscape. ... The clear, concise presentation of details and the theatrically arranged spaces constitute a sublime and poetic expression, and push the boundaries of what a house can be."

Architect: "The house is adjacent to a [Richard] Neutra house, the Serulnic House, from the 1950s. My clients were ... looking for a house that would be both a respectful yet challenging neighbor to the Neutra house. They wanted to design a house that would take into consideration the meaning of 'Contemporary' as opposed to 'Modern.' That might seem like a small distinction, but for them the term Modern has a very particular meaning, both in their world as painters and also in architecture." —Michael Maltzan



The Gates and Hillman Centers for Computer Science

Pittsburgh
Mack Scogin Merrill Elam Architects

Atlanta-based Mack Scogin Merrill Elam Architects faced numerous challenges in designing the School of Computer Science at Carnegie Mellon University. The buildable area was limited by a large zone of subsurface rock and sewer lines. And the architects were charged with designing a single, signature building that could be treated as two separate facilities.

Jury: "The building not only matches the culture and aspirations of the school, but also provides campus connections that had been clearly missing before. The fenestration and zinc exterior skin surprisingly relate beautifully to the campus fabric without being literal."

Client: "The skin and the form of the building speak to the 21st century. Yet inside it is a very comfortable space. The organization of the building worked so well right from the start—the sense that this is public space merging with private space. It is a leading-edge, contemporary building housing world-class science ... [that has] this innate, comfortable feel inside." —Ralph Horgan, associate vice provost, Campus Design & Facility Development, Carnegie Mellon



ARCHITECTURE

Ruth Lilly Visitors Pavilion

Indianapolis
Marlon Blackwell Architect

Situated in a 100-acre park at the Indianapolis Museum of Art, the Ruth Lilly pavilion was designed by Fayetteville, N.C.-based Marlon Blackwell Architect. The project features an angular canopy of ipe wood slats that envelops a glass-enclosed multipurpose room.

Jury: "This pavilion is artfully cast in the shadows of the adjacent trees; its transparency is enhanced by a latticed canopy that filters light through its entirety. ... Its low posture and horizontal form enhance the encompassing flora."

Client: "It is incredibly beautiful to sit in there, and quiet and contemplative. It's like sitting outside, only you are in a building. I think what it does is it really heightens your awareness of what is around you—the nature and light and the colors and textures and sounds." —Lisa Freiman, director, 100 Acres: The Virginia B. Fairbanks Art & Nature Park





ARCHITECTURE

8 House

Copenhagen
Bjarke Ingels Group (BIG)

Designed by Copenhagen-based BIG, the figure-eight-shaped, mixed-use 8 House contains 475 housing units. Apartments occupy the top floors, where they benefit from sunlight, fresh air, and views. Commercial spaces below merge with life on the street. Two sloping green roofs reduce the heat-island effect, and visually reference adjacent farmlands to the south.

Jury: "The 8 House masterfully re-creates the horizontal social connectivity and interaction of the streets of a village neighborhood through a series of delightful accessible ramps. ... This is a complex and exemplary project of a new typology."

Client: "The 8 House culminates three residential projects that I have developed with Bjarke Ingels in Copenhagen. Our vision for the 8 House was to create a sense of community and strengthen the social interaction between its residents, which became possible only through my long-term collaboration with BIG." —Per Høpfner, CEO, Høpfner Partners



ARCHITECTURE

Ghost Architectural Laboratory

Upper Kingsburg, Nova Scotia
MacKay-Lyons Sweetapple Architects Limited

The laboratory, an architectural-education center in the tradition of Taliesin, is sited on the Nova Scotia coast, where Samuel de Champlain made landfall in 1604. The tower, studio, cabins, barns, and boathouse were constructed as part of the lab's design/build curriculum. The buildings accommodate the center's programming and provide a venue for community events.

Jury: "This project reveals itself as more than just a grouping of buildings; it is a physical experiment in education, as well as an act of will to preserve the serene beauty in the landscape. ... This project is truly more than the sum of its parts; it is a wonderful resolution of materials, details, landscape, and learning."

Client: "One of the things that gave the Ghost Lab a certain kind of discipline was that everything was made out of wood. So there was this kind of limited-means thing about it. It was like a major constraint: Everything had to be made out of wood you could get overnight from a local mill. In that sense, it was really like a research lab, where you have constants, you have controls, as well as variables. So a sustained study in wood framing gives it depth, rather than the materials changing all the time." —Brian MacKay-Lyons, Hon. FAIA, founder of Ghost Architectural and Laboratory and founding principal of MacKay-Lyons Sweetapple Architects



INTERIOR

Record House Revisited

Owings Mill, Md.
David Jameson Architect

Four decades after this house appeared in *Architectural Record*, the new owners—Greg and Lorena Andon—embarked on a renovation. Alexandria, Va.-based David Jameson Architect removed select interior walls, revealing free-flowing pavilions linked by a glass entrance. The original brick fireplace and skylight ring at the center of the house was exposed and left unchanged.

Jury: “An excellent example of new work within a significant midcentury modern structure. The interventions appear to reinforce the original design concept. ... The new work serves to highlight the naturally lit passage and accentuate the overall spirit of the house.”

Client: “We wanted to keep the essence of the house the same, but bring it up to modern times. We had no idea what we wanted. We were just throwing out ideas. David Jameson was like a mind reader. ... He understood the way we wanted to live and how one space flowed into the next. We love being here. It’s calm and peaceful, and it’s got a great view of the woods.” —Lorena Andon



LEFT: PAUL WARCHOL; RIGHT: ART GRAY PHOTOGRAPHY



INTERIOR

Memory Temple

Los Angeles
Patrick Tighe Architecture

Local firm Patrick Tighe Architecture designed Memory Temple for the SCI-Arc Gallery with an innovative twist. The firm commissioned composer Ken Ueno to author a musical composition for the installation, made from a renewable polyurethane foam. After a spectrogram mapped the points and vectors of the composition's frequency, robots carved those exact contours into the installation walls.

Jury: "The idea of generating a form-aesthetic memory of environmental sounds by using a six-axis CNC machine that mills mapped frequencies, translated into points and vectors, is altogether fascinating. ... Interior space, in this case, becomes a physical manifestation of another aspect of current culture."

Client: "I would say the aspiration of the SCI-Arc Gallery is introverted, meaning the work comes from the personal, idiosyncratic, and private inclinations of the architect. When it comes to Patrick Tighe, this work is very different than what he has typically done. So rather than repeating what he has already learned, this has a very different sensibility. Its interest is in connecting outside the traditional world of architecture to music. Its quizzical, odd, unusual shape is, in a way, a search for something that stimulates the idea to create a result. This is an argument for something beyond mere technique." —Eric Owen Moss, FAIA, director, SCI-Arc



The Integral House

Toronto
Shim-Sutcliffe Architects

The Integral House by Toronto-based Shim-Sutcliffe Architects incorporates a 200-person performance space for music, and myriad sustainable features such as geothermal heating and cooling, a green roof, and vertical wood fins that provide sun shading as well as acoustical benefits. Materials were selected for their aesthetics as well as life-cycle costs.

Jury: "The relationship of the home to both its musical program and its surrounding environment was superbly articulated. ... The louvered vertical fins modulate the light and views to the exterior surroundings, as well as correlate to music theory rooted in strong rhythm and syncopation."

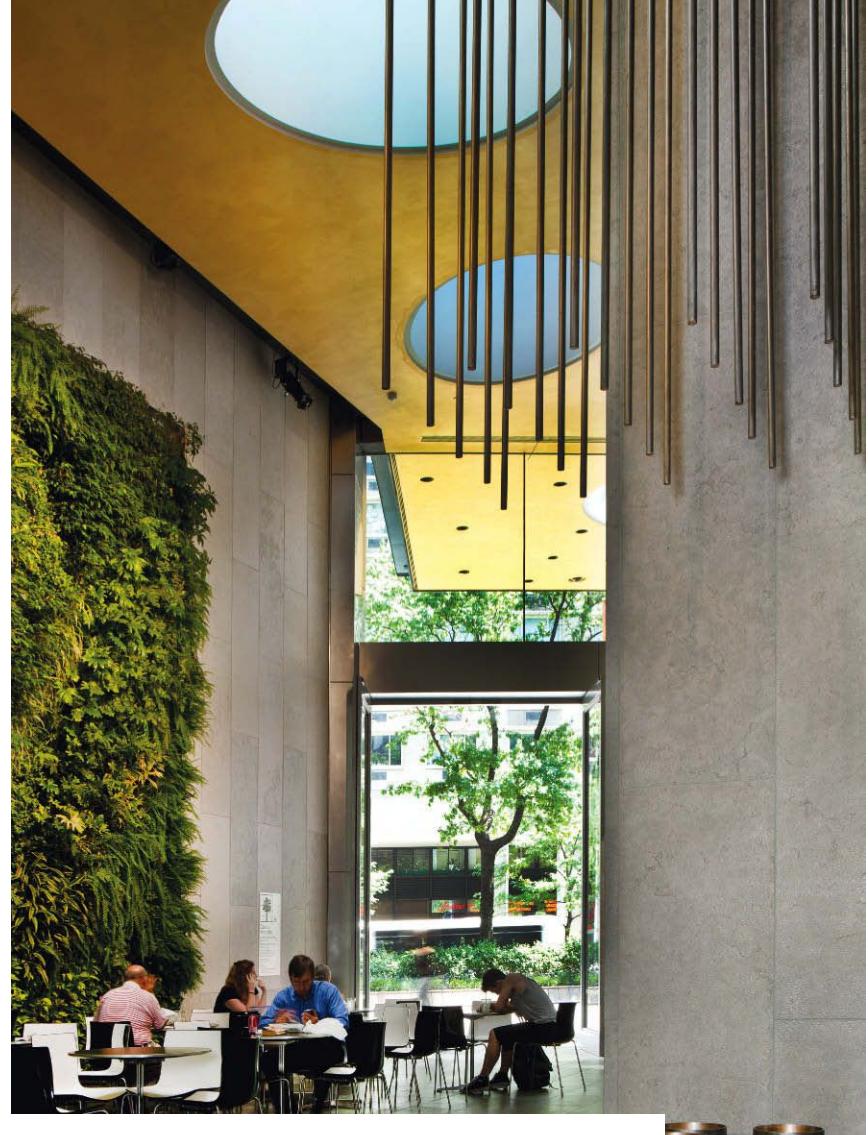
Client: "I had two major requirements. One, I wanted curves. Although Brigitte [Shim] and Howard [Sutcliffe] had not used curves in their previous work, they have come up with some particularly beautiful curves. ... The other requirement was a performance space. And I think they've done a brilliant job of incorporating the performance space into the everyday workings of the house. It's not a separate thing."

—James Stewart, owner





LEFT: ED BURTYNSKY; RIGHT: NIC LEHOUX



INTERIOR

David Rubenstein Atrium at Lincoln Center

New York
Tod Williams Billie Tsien Architects



Focusing on light, color, texture, and materials, New York-based Tod Williams Billie Tsien Architects transformed a narrow passageway into Lincoln Center's visitor facility. The atrium features art installations, a media wall, 20-foot-high plant-covered walls, as well as marble benches and movable furnishings. Thin streams of water drop from the ceiling into a stone basin.

Jury: "This space is sensitively transformed, incorporating nature, art, and commercial activity in a carefully modulated manner. The multiple scales created by the ceiling 'puddles' and huge textile art are brought down to human scale by the inclusion of mural plantings, tables and chairs, reading areas, and well-situated vendor stations."

Client: "Billie and Tod's innovative design was key to the transformation of an underutilized public space into a lively, accessible environment. As a gateway to Lincoln Center, the atrium has engaged new audience members, inviting them to take advantage of our free programming, discount tickets, food, and other amenities. The creative vision also reflects a respect for the materials used throughout the center, and resulted in the atrium becoming the center's first LEED-certified, green building." —Reynold Levy, president, Lincoln Center



INTERIOR

ARTifacts

Omaha, Neb.
Randy Brown Architects

With minimal interventions, Omaha-based Randy Brown Architects converted the studio of Kent Bellows, a deceased artist, into the Kent Bellows Studio and Center for Visual Arts. The storefront is a sculpture of steel plates and tubes that contains windows, seating, signage, and an entrance. A new staircase leads to a continuous walkway that connects new program spaces. The library provides meeting space, which hovers above the gallery, defined by a folded wood wall and ceiling.

Jury: "An excellent example of what is possible within limited means and unlimited desire. ... Working within a historical structure, the project sensitively responded to both program and context in a series of deliberate and carefully considered moves."

Client: "We, Kent's family, wanted the public and young artists to draw inspiration from Kent's studio spaces, to have a great place to come together to create and to discuss their art. We wanted to bring the creative energy back to the building. When the young artists express how much they appreciate being able to use and to learn from Kent's inspiring spaces, we are overjoyed." —Robin Bellows Griess, co-founder, Kent Bellows Studio and Center for Visual Arts

INTERIOR

HyundaiCard Air Lounge

Incheon, South Korea
Gensler

This project by San Francisco-based Gensler takes the typical airport lounge, where passengers passively wait, and transforms it into a dynamic space that engages travelers as they prepare for their trips. Located in Incheon Airport, the lounge includes a custom vending machine, dreamlike art videos, and personalized flight tracking.

Jury: "The project takes an innovative approach to the airline lounge model, effectively establishing a unique relationship between the passenger and the space. ... The well-conceived assimilation of technology engages the traveler in both the 'black box' and the surrounding walls that integrate helpful passenger-flight-status flatscreens."

Client: "Design is a core part of our business. At HyundaiCard, we are not just selling credit lines. To support our customers' lifestyle, we design solutions ... [and] customer experience. What I particularly love about our lounge is the vending machine. People can swipe their cards and grab the thing they forgot to bring. People appreciate the simple beauty of the space—white, clean, and modern. And they are even more surprised to find out how practical and functional it is." —Sukjoon Won, Chief Marketing Officer, HyundaiCard





INTERIOR

Prairie Management Group

Northbrook, Ill.
Goetsch Partners

A project by Chicago-based Goetsch Partners for the Prairie Management Group—investment offices inserted into a single-story office suite—features a colonnade made of exposed steel, glass-screen walls, and a maple pavilion. The arrangement of glass frames and millwork forms signify an appreciation for design and nature that furthers the client's business objectives.

Jury: "Small and well-executed, this project is quiet, restrained, and sophisticated, with a straightforward manner towards both the composition and detail that reinforces the larger concept."

Client: "Everybody who walks into the office is so pleased with it, because you walk into a space that you know is modern and contemporary—and yet it has interesting sight lines and viewpoints. It's the same with our offices along the south side: Instead of putting walls between ourselves and our assistants and our analysts, we used glass. Even the people in the open office are looking out at the prairie grass. Everybody gets the natural light and everybody sees the wildlife—the foxes and deer." —Gordon Segal, CEO, Prairie Management Group

INTERIOR

The Wright at the Guggenheim Museum

New York
Andre Kikoski Architect

New York-based Andre Kikoski Architect's design for this restaurant references Frank Lloyd Wright's Guggenheim but also manages to stand apart as a striking contemporary space. The project features sculptural forms that create a flared ceiling, cascading walls that lead down to comfortable banquets, and a curved bar and communal table.

Jury: "This project is sensitively handled and respectful of the essence of the original architecture. ... The design approach was controlled, but playful, and complements the nuance of the museum's overall movement and dynamic."

Client: "Our main goals were to create a contemporary restaurant that would fit in well with the design of our 1959 Wright building, and that would change the food experience from a quick sandwich to an elegant lunch or dinner for visitors. In contemporary materials, Andre Kikoski references the geometric shapes, the subtle use of daylight, and the shades of white in the Wright." —David van der Leer, Curator, BMW Guggenheim Lab



LEFT: MICHELLE LITVIN; RIGHT: PETER AARON, ESTO



AIA
**HONOR
AWARDS**



INTERIOR

Children's Institute Otis Booth Campus

Los Angeles
Koning Eizenberg Architecture

Santa Monica, Calif.-based Koning Eizenberg Architecture converted three industrial buildings into the new headquarters for the Children's Institute, a nonprofit dedicated to treating and preventing child abuse. The campus includes counseling services and a community center that offers a variety of art and after-school programs. The project prioritized community engagement.

Jury: "The spatial zone between the north portion of the project for families and preschool, and the southern portion dedicated to the community center, therapy, and education programs, is well considered, serving to open the building to natural light and interactive activities."

Client: "People come in and it blows their mind that there is something that is this wonderful in the community. But while Koning Eizenberg made the space beautiful, they did not make it super fancy. So it never feels like going into a really fancy house where you can't sit on the furniture. It's clearly made to be used. It's beautiful, but also approachable." —Nina Revoyr, executive vice president, Children's Institute



LEFT: ERIC STAUDENMAIER; RIGHT: PETER VANDERWARKER



INTERIOR

Joukowsky Institute for Archaeology and the Ancient World

Providence, R.I.
Anmahian Winton Architects

A renovation by Boston-based Anmahian Winton Architects has transformed Rhode Island Hall, a Greek Revival building at Brown University, into the new home for the Joukowsky Institute for Archaeology and the Ancient World. The architects introduced transparency and daylight between program spaces to encourage interaction between faculty and students.

Jury: "The design makes a clever reference to its archaeological interests by creating a 'found object' that is both beautifully detailed and sophisticated in expression. ... The effort directed at dissolving the boundaries between student and teacher is admirable."

Client: "It has fulfilled all our hopes and more. It offers all the basic elements: teaching space, offices, a library, work space—but all are integrated in a way that keeps people moving and talking. The design is beautiful and quirky. People can inhabit it in many ways: for lectures, for silent study, for small group discussions, for parties, for snoozing. But what really makes it is the light." —Susan Alcock, director, Joukowsky Institute for Archaeology and the Ancient World

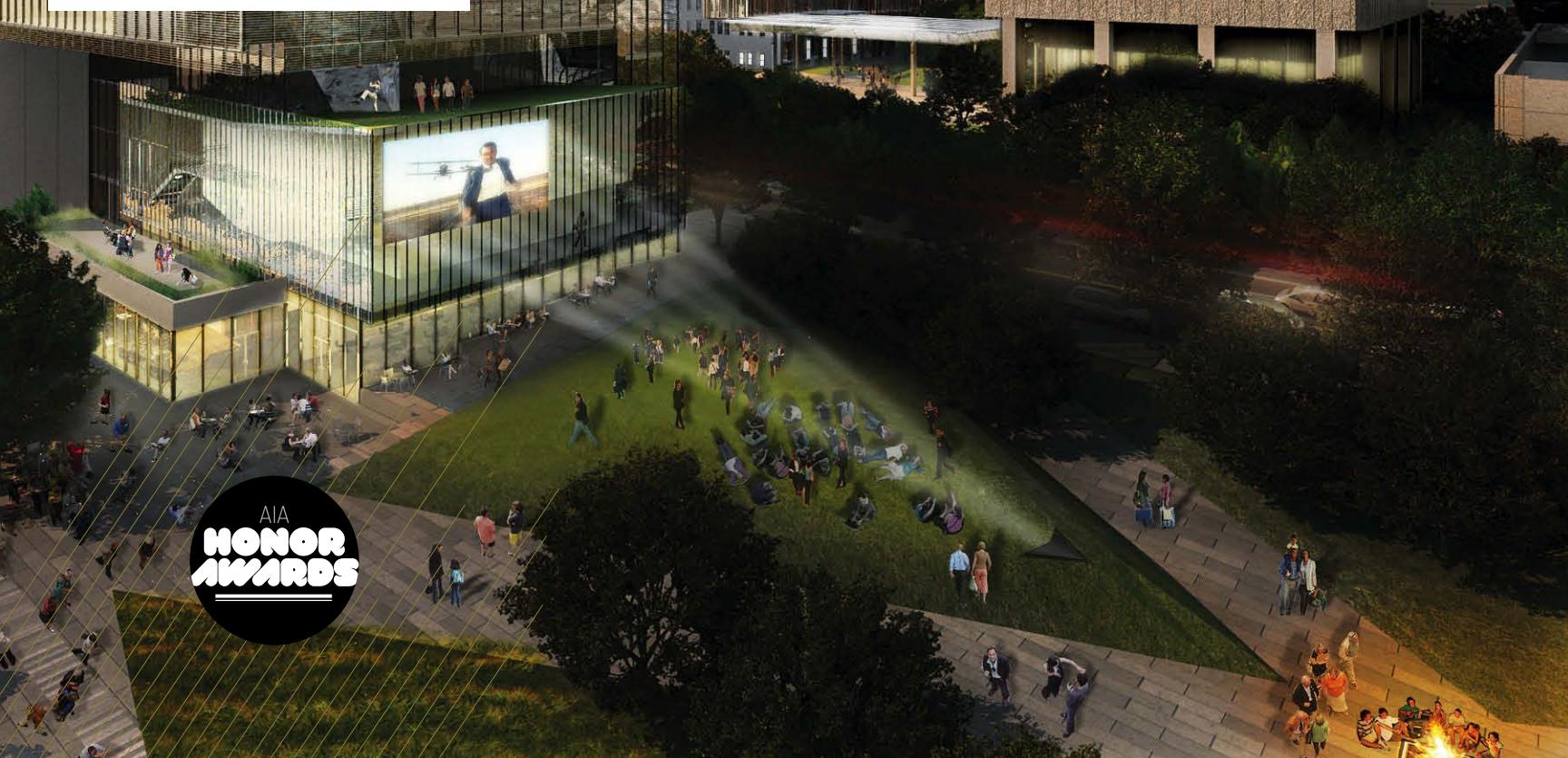
SandRidge Energy Commons

Oklahoma City
Rogers Marvel Architects

The SandRidge Energy headquarters master plan includes five buildings in downtown Oklahoma City and weaves together architecture and landscape architecture. The project, by New York-based Rogers Marvel Architects, calls for a network of programs that will integrate the company into the city and catalyze adjacent development. Employees and the public will share outdoor spaces.

Jury: "This is a particularly refreshing project that takes on a civic role in the redevelopment of existing buildings to create a better downtown. ... The reinvestment of this corporate campus project, combined with preservation and strong public spaces, will contribute to making Oklahoma City a better place."

Client: "There are a tremendous number of jobs being developed in the energy sector. But competition for talent is tough, so we wanted to give our employees something to be proud of. We [also] wanted to share with our neighbors. That was the idea of the Commons area. We didn't want to set up walls. We wanted our employees to be able to interact with other people downtown." —Tom Ward, CEO, SandRidge Energy



LEFT: COURTESY ROGERS MARVEL ARCHITECTS; RIGHT: COURTESY SASAKI ASSOCIATES



REGIONAL & URBAN DESIGN

Jordan Dead Sea Development Zone Master Plan

Amman, Jordan
Sasaki Associates

Sasaki Associates, based in Watertown, Mass., designed a plan that encompasses 15 square miles and is designed to foster a robust tourism-based economy along the Dead Sea. The plan seeks to balance development with conservation, intending to be both a source of pride and revenue for Jordan and to set high standard for sustainable development and urban design.

Jury: “[We] appreciated the project’s emphasis on the creation of a public waterfront, unusual in this region of resorts. The development of a planning strategy that is structured around the movement of water demonstrates an ecological sensitivity.”

Client: “The plan sets a feasible phased growth and enhances the site’s activity offerings, development potential, and tourism investment for years to come. It introduces development while preserving and enhancing the unique ecological and cultural qualities of the area. The plan identifies a realistic development scenario that responds to market constraints, accounts for resource limitations, and protects natural resources.” —Amal Zanoun, director of Projects & Infrastructure Department, Jordan Development Zones Co.





REGIONAL & URBAN DESIGN

Reinventing the Crescent: Riverfront Development Plan

New Orleans
Eskew+Dumez+Ripple

Targeting the New Orleans riverfront as high ground poised for redevelopment, local firm Eskew+Dumez+Ripple's development plan envisions the design of a sequence of public spaces. The plan would enhance existing public sites such as the Moonwalk, and create new urban nodes that would link the city to the river's edge.

Jury: "This is an innovative and radical approach to readdressing the levee on the Mississippi and reconnecting the citizens of New Orleans back to their riverfront. The typologies that are being developed will transform the visual and physical connection of the city to the river."

Client: "The big idea is to connect the city with its major defining asset, the Mississippi River. Given the unusual topography we have, the riverfront is the high natural levee, and the whole city has not physically connected with it in a way you might typically find in other cities along rivers. In a city like ours—where we are always balancing history, preservation, and reinvention—this is a bold move at a large scale that is authentic to the city's character, but also new and creative." —William Gilchrist, FAIA, director of Place-Based Planning, City of New Orleans





REGIONAL & URBAN DESIGN

Fayetteville 2030: Transit City Scenario

Fayetteville, Ark.
University of Arkansas Community
Design Center (UACDC)

UACDC envisions the development of a streetcar system in Fayetteville with this independent study intended to complement the city's official master plan. The center envisions targeting 80 percent of future development around a five-mile-long multimodal transit boulevard.

Jury: "The premise of this project is very forward-thinking. ... The preservation of the rural character of the existing town, as well as the addition of the more modern elements, has been masterfully handled."

Client: "The neighborhood plans that we [typically] work on are generated through charrettes, so there's heavy public involvement and buy-in from day one. ... That is one disadvantage of UACDC. They have the freedom to imagine and create amazing work, but they don't have the public involvement, knowledge, and then buy-in once it is complete. Bringing these groups into the fold is necessary if there is going to be a meaningful conversation." —Jesse Fulcher, planner, City of Fayetteville, Ark.



Portland Mall Revitalization

Portland, Ore.
ZGF Architects

The Portland Mall, which extends 58 blocks through the city's downtown, has been reborn as a premier civic space following a renovation by locally based ZGF Architects. The project included the design of exclusive transit lanes, dedicated lanes for cars and bicycles, and parking-loading zones. Two major hotels and more than 40 storefronts were renovated in separate projects.

Jury: "This project asserts that urban design can really work, and exemplified this through design at both the large scale and the detail. ... It has been beautifully executed, with fine design details upgrading the good bones of the existing situation."

Client: "The downtown transit mall is such a vital, important, and iconic aspect of the city. It has been 30 years since we first envisioned it and had buses running on it. We really wanted to introduce light-rail service into the mix. ... This was not a top-down, transit-agency design. This was a community design that really paid tribute not only to the transportation element, but also the redevelopment leveraging and the renewal aspects of the mall. The result has been fantastic."

—Dan Blocher, executive director of capital projects, TriMet



LEFT: BRUCE FORSTER; RIGHT: COURTESY MOORE RUBLE YUDELL ARCHITECTS & PLANNERS/DMOD ARCHITECTS



Grangegorman Urban Quarter Master Plan

Dublin

Moore Ruble Yudell Architects & Planners/DMOD Architects

The largest higher-education campus development ever undertaken in Ireland, the Grangegorman master plan for a northern suburb of Dublin was a collaboration between Santa Monica, Calif.-based Moore Ruble Yudell Architects & Planners (MRY) and locally based DMOD Architects. The project will accommodate 4.5 million square feet of academic and residential buildings for the Dublin Institute of Technology, replacement psychiatric and new primary-care facilities for Ireland's national healthcare service, as well as new amenities for the larger community.

Jury: "This project presents an impressively comprehensive approach to site planning, with clear and systematic design strategies. ... The sense of transparency both within the new buildings and through the interstitial public space is impressive."

Client: "MRY did a really good design on the public realm and created an urban feel to the campus's main pedestrian areas. The location of the student accommodation across the campus, as well as in courtyards, creates an urban feel with lights on at night, and shops and cafés at ground level. The pedestrian areas create vibrant street activity. At present, a large wall surrounds the site and there is a single entry point. MRY has opened up the site and linked it into the city. In doing so, they created a new destination." —Noel O'Connor, director of Students Services, Dublin Institute of Technology





TOP: COOPER, ROBERTSON & PARTNERS; KIERANTIMBERLAKE; OLIN; BOTTOM: ROBIN HILL



REGIONAL & URBAN DESIGN

Master Plan for the Central Delaware

Philadelphia
Cooper, Robertson & Partners;
KieranTimberlake; Olin

Extensive public engagement informed this Delaware River waterfront master plan—a collaboration between Philadelphia-based KieranTimberlake and Olin, and New York-based Cooper, Robertson & Partners. The plan proposes a strategic phasing and funding of public enhancements to six miles of the waterfront—parks, trails, and connections to existing neighborhoods—and includes zoning recommendations to shape private development.

Jury: "This is a very bold, long-term vision. ... The project demonstrates great connectivity back into the neighborhood fabric, integrating existing buildings, developed open spaces, and the esplanade walk. ... A good range of density has been represented."

Client: "It sounds like we are making a major public investment and creating a park. ... But it's really intended to attract high-quality private development that will provide jobs, provide residences, build new neighborhoods, create tourist destinations—all the things that a world-class waterfront really needs." —Marilyn Taylor, planning committee chair, Delaware River Waterfront Corp.



REGIONAL & URBAN DESIGN

Miami Beach City Center Redevelopment Project

Miami Beach, Fla.
Gehry Partners; Hines; West 8 Urban Design and Landscape Architecture

Previously the site of two parking lots, the Miami Beach redevelopment project includes the New World Center, an innovative facility for music education and performance; Miami Beach SoundScape, a public park and event space; and a 556-space parking deck. The center's east facade features a 7,000-square-foot projection wall that displays symphonic performances in the auditorium for audiences in the adjacent park.

Jury: "A small project with big impact, the building and its public park space ... [are] an extremely vital and dynamic cultural space within the city. ... The project makes good use of existing buildings and creates a strong connection back to the city."

Client: "Miami Beach is very much about using art to define itself and is very eager to establish cultural turf. ... So the redevelopment of these two surface parking lots was focused on the long-term benefit to Miami Beach citizens and to the commerce of this community. Based on the early returns, we think we got it right." —Howard Herring, president and CEO, New World Symphony



YOUNG ARCHITECTS AWARD 1–13

1. Hao Ko, AIA

Design director in Gensler's San Francisco office, Ko "is an amazingly gifted architect and his example inspires both his team and clients with purpose and focus."

2. Katie M. Harms, AIA

An architect with OPN Architects in Cedar Rapids, Iowa, Harms "is a consummate professional and an exemplary voice for our emerging professionals," said the jury. She "raises the standard for young architects."

3. Michael J. Hanrahan, AIA

Known for his ability to masterfully bring together both young and experienced voices, being inclusive yet persuasive, clear and decisive, Michael continues to draw upon his personal experiences to lead our organization," said the jury about Hanrahan, an associate partner at Three Bridges, N.J.-based Clarke Caton Hintz.

4. Thomas Jacobs, AIA

A principal at Chicago-based Krueck + Sexton Architects, Jacobs "is tireless in his dedication and devotion to the practice of architecture, to his clients, team members, and students," said the jury. "His guidance and aspiration for the profession is infectious."

5. Brad Tomecek, AIA

Tomecek, a principal of Boulder, Colo.-based Studio H:T, "believes in creating a dialogue in the classroom, shaping how students participate in consciousness-raising activities in the studio: exploring new knowledge, building conceptual frameworks, and developing sustainable-design strategies."

6. Brian Cavanaugh, AIA

A principal at Portland, Ore.-based Architecture Building Culture, Cavanaugh "possesses a sophisticated and creative mind, coupled with a deep commitment to furthering the profession's role in building rich and propelling communities through design excellence, advocacy, and proactive leadership."

7. Timothy C. Bicknell, AIA

Bicknell, project designer in AECOM's Minneapolis office, exhibits "dedication and commitment to collaboration, whether selflessly giving time to nonprofits in the community, serving the profession, or pursuing design excellence in his architectural work."

8. Jonathan Penndorf, AIA

"His strong voice for professionalism, activism, and balance has helped him reach and inspire other young professionals to achieve and to serve," said the jury of Penndorf, an architect in Perkins+Will's Washington, D.C., office.

9. Adam Palmer, AIA

Palmer is a project manager with Indianapolis-based Schmidt Associates. "Adam's significant role through his YAF [AIA National Young Architects Forum] participation and mentoring of our younger architects and emerging professionals is vital to the growth of this profession."

10. Stuart Magruder, AIA

Magruder founded Studio Nova A Architects in Los Angeles. "His enthusiasm for the practice of architecture, the quality of his work, and his desire and willingness to put forth time and effort to improve our profession is unparalleled."

11. Michael Halflants, AIA

Halflants, a principal of Sarasota, Fla.-based Halflants + Pichette Architects, is "recognized throughout Florida as an emerging architect of exceptional talent, great rigor, and unapologetic passion."

12. Shari G. Grant, AIA

The principal of Del Mar, Calif.-based Architectural Presence, Grant "is a woman of quiet strength, who has the rare talent to turn a minority idea into a consensus by patiently exploring all sides of the issue."

13. James M. Evans, AIA

Evans founded Houston-based Collaborative Designworks. "His talent, skill, and leadership

in the profession have earned him the devotion of clients, contractors, and admirers alike."

ASSOCIATES AWARD 14–15

14. Aisha Densmore-Bey, Assoc. AIA

Densmore-Bey, the principal of her Boston-based firm, "is focused on evolving best practices for architects and promoting the design of museums as community centers, blended with the embrace of technology."

15. Haley Gipe, Assoc. AIA

Gipe, an architect with Fresno, Calif.-based Darden Architects, "recognizes the importance of service in our profession and the ability we have to effect positive change. Her passion and dedication on behalf of interns and her commitment to the advancement of the architecture profession is inspiring."

WHITNEY M. YOUNG JR. AWARD 16

16. Mortimer M. Marshall Jr., AIA

Marshall was the director of design at the Department of Defense from 1967 to 1982 and founder of the Reston, Va.-based Marshall Group. "Whether it was as chief architect for the Department of Defense, or as a principal in his own firm, he has championed the rights of those underrepresented in the profession," wrote former AIA president Marshall Purnell, FAIA, in his recommendation letter.

TOPAZ AWARD 17

17. George Baird, Intl. Assoc. AIA

A professor for many years at the University of Toronto, Baird is also a partner at Toronto's Baird Sampson Neuert Architects. "Like a professional philosopher, never frightened by the complexity or political implications of an issue, he debates the opposite opinions fiercely and at length until the next step forward is clear," wrote architect Charles Jencks in his recommendation letter.

COLLABORATIVE ACHIEVEMENT AWARD 18–20

18. Rice Design Alliance

Executive director Linda Sylvan leads the Rice Design Alliance, a Houston-based

nonprofit that advocates for architecture and urban planning: "An excellent program that raises consciousness about architecture and urban design."

19–20. CultureNOW

A New York-based nonprofit led by Anne Lewison, AIA (19), and Abby Suckle, FAIA (20), CultureNOW promotes cultural tourism and arts education. "The collaboration between architects and cultural institutions works to coalesce art, architecture, and history in a new way and gives the public a new level of access to these aspects of the city."

THOMAS JEFFERSON AWARDS FOR PUBLIC ARCHITECTURE 21–23

21. Alexander Cooper, FAIA

Cooper co-founded the New York-based firm Cooper, Robertson & Partners, responsible for myriad public planning projects in the city, including work on ground zero. Wrote John Zuccotti, the former city-planning-commission chair, in his recommendation letter: "There are many levels on which to base Alex's selection for the Thomas Jefferson Award. None is more fitting, nor has greater impact, than his work at ground zero."

22. Daniel J. Feil, FAIA

Currently the executive architect on the Dwight D. Eisenhower Memorial Commission, Feil previously served as site-design manager for National Airport in Washington, D.C., when he worked with Cesar Pelli, FAIA, on the site's redevelopment. "Dan has developed the most sophisticated management process I know of for eliminating all cracks where time, money, or quality are usually lost," wrote Pelli in his letter of recommendation.

23. Robert A. Peck, Hon. AIA

Peck was the General Service Administration's Public Buildings Service commissioner until he recently left the agency amid a spending scandal. "The agency's renowned Design Excellence [Program] would not have national impact without Bob's unflagging support and vigilance," wrote Arthur Gensler, FAIA, in his recommendation letter. "Through it, he has made sure that America's best architects are creating federal buildings."



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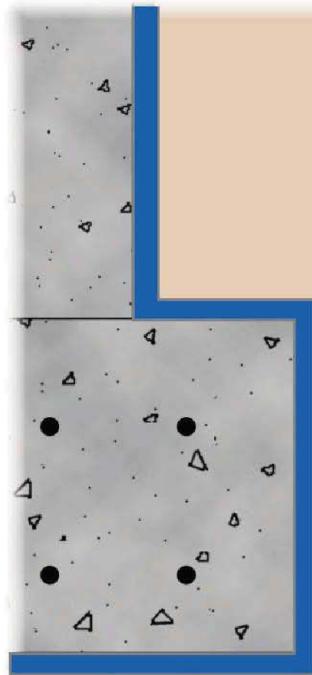
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KING'S CROSS STATION WESTERN CONCOURSE

LONDON
JOHN MCASLAN + PARTNERS

TEXT BY WILLIAM UNDERHILL
PHOTOS BY HUFTON + CROW







IT IS ONE OF JOHN MCASLAN + PARTNERS (JMP)'s biggest British projects. But the £547 million (\$886 million), multiphase overhaul of London's King's Cross rail terminal came with problems on a matching scale. Four years ago, when construction began on the project's centerpiece—an outsized concourse for departing passengers—time was already tight. The 160-year-old King's Cross station is a Grade I-listed historic building, and any plans required lengthy consultation. What's more, no work could begin until the roof slab was in place for a new ticket hall at the London Underground station below, and rail authorities allowed no trains to be canceled during construction.

Yet the deadline was fixed: The showcase concourse had to be ready in time for this summer's Olympic Games. Passenger numbers at King's Cross—already one of the city's busiest stations—are expected to rise steeply as people take advantage of the new Javelin high-speed train to the games site, which will leave from the neighboring St. Pancras terminal. (St. Pancras shares the same Underground stop with King's Cross.)

These days, London-based JMP's chairman John McAslan, Int'l. Assoc. AIA, can look back with relief: After 15 years of planning, the Western Concourse opened in March, on time and to huge acclaim. The 47 million people who pass through King's Cross each year—a number that is projected to increase by another 10 million by 2020—can now move easily through a 7,500-square-meter (80,730-square-foot) covered concourse that more than triples the size of the station's previous forecourt and ticket hall. In the end, "the constraints became opportunities," McAslan says. "But it was like an examination question where the answers had to be exactly tailored to all the conditions."

Central to JMP's design for the Western Concourse is the shell-like diagrid roof of glass, steel, and aluminum that rises 20 meters (66 feet) above the ground at its highest point. Engineered by Arup, the vast canopy splays out from a great steel funnel located a few feet from the historic station's western façade. (Yet another constraint

was that no additional load could be placed on the station wall itself.) Intersecting branches of steel spread downward, spanning out in a 74-meter (243-foot) radius from that central point. A ring of 16 supporting columns at the outer edge takes the load. With no supporting columns in between, the Western Concourse is now the largest single-span structure in Europe.

Outside, the semicircle of the concourse deliberately mimics (and, in fact, fills) the curve of the nearby Great Northern Hotel. Completed two years after the original King's Cross station, the hotel was also designed by the same architect, Lewis Cubitt. The geometry repeats again inside the concourse, where a mezzanine level—supported by decorative iron brackets and covered with 5 million gleaming, white ceramic tiles, coated to repel dirt—follows a similar sinuous line. To meet the design brief from the station's owner, Network Rail, the structure provides space for a range of shops and cafés that overlook the ground-floor plaza.

Inspiration for the roof's airy glass-and-steel design came partly from the 19th century. "I have always liked the great Victorian glasshouses as at Kew Gardens," says McAslan, who's also a keen admirer of Grand Central Terminal in New York. But other influences, he says, included the soaring airports designed by Eero Saarinen—Dulles International in Washington, D.C., and John F. Kennedy International in New York. As at an airport, the departure and arrival areas of King's Cross are now separate, and McAslan hopes that the elegance of the concourse will capture something of the glamour of air travel. ("Why should air passengers always be treated so well and rail passengers so shabbily?" he wonders.)

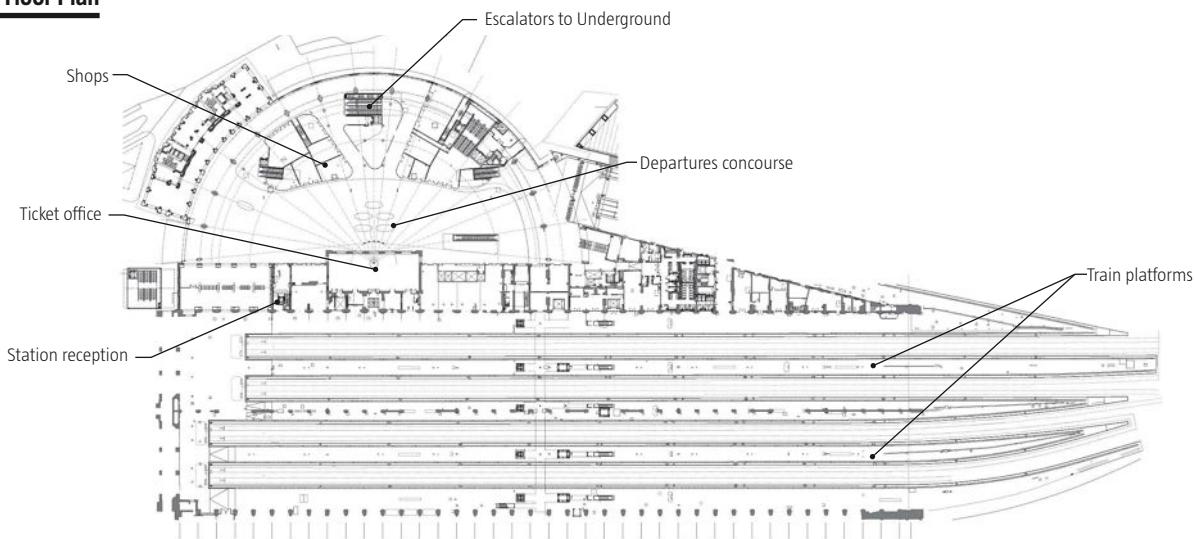
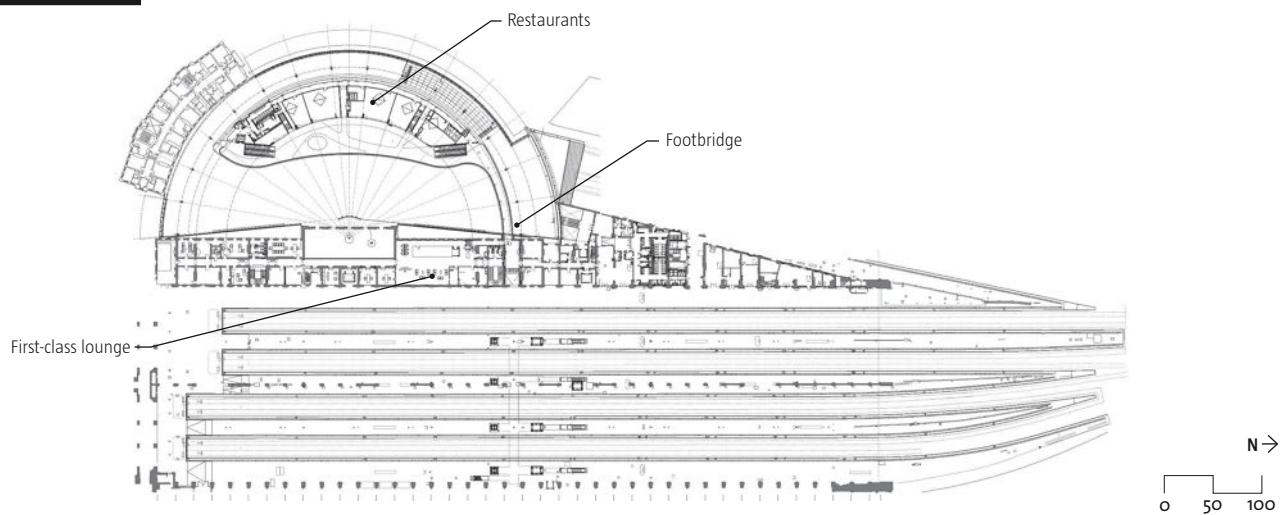
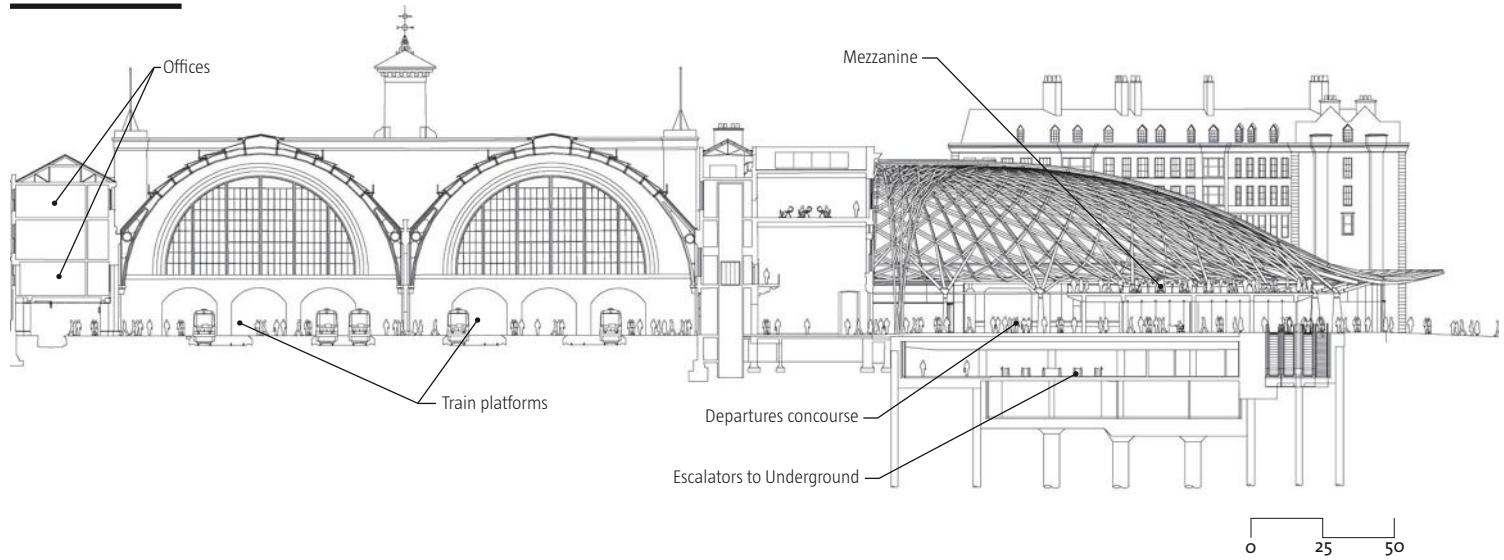
Happily, this reflects the client's own thinking. Network Rail wanted a building that was more than merely functional. "This wasn't just about providing more space," says Ian Fry, the company's programme director for the Western Concourse. "We wanted something that would give passengers an uplifting experience at the start of their journey."

The glass, steel, and aluminum diagrid roof of the new Western Concourse at King's Cross station spans out from a central woven funnel (previous spread). underneath the 74-meter open span (opposite), passengers move through a plaza filled with shops, access the busy King's Cross/St. Pancras Underground station, and purchase tickets for the trains that depart from the platforms beyond. The building's curving form was designed to complement (and, in fact, fit into) the curve of the adjacent Great Northern Hotel (above), which was designed by the same architect and completed two years after the historic station.





To the east of the Western Concourse, and accessed by a new series of gates at the southern end, are the train platforms in the station's main train shed. John McAslan + Partners is overseeing restoration and refurbishment in this space as well: The reglazing of the barrel-vaulted roof is expected to be completed later this summer.

First-Floor Plan**Mezzanine-Level Plan****East-West Section**



In the Western Concourse, a sinuous mezzanine level (this image) hosts restaurants and shops and follows the same curving geometry as the station's roof structure. A pedestrian bridge at one end connects passengers to the train platforms in the station's historic main train shed beyond.



Entrance to the offices in the station's Eastern Range

TOOLBOX: THE MASTER PLAN

The facelift for King's Cross station goes far beyond the building of the new Western Concourse. John McAslan + Partners have been working on the project since 1998, and then developed a master plan in 2005 to overhaul the entire complex. In time, the station will serve as a gateway to one of London's largest ongoing regeneration projects: King's Cross Central, a 67-acre patch of postindustrial wasteland barely a mile from the West End, where (after planning debates that stretch back to the late 1980s) work is finally under way.

Much of the interior of King's Cross is already transformed. A 65-meter (213-foot) footbridge runs across the station's main train shed at mezzanine level, allowing passengers easier access to any of the nine platforms below. To keep the platforms clear for passengers, old below-grade tunnels have been cleared to create a passage to carry goods directly to trains. (Harry Potter fans can take heart. Despite the changes, a sign on the wall showing the site of the so-called Platform 9 3/4, used by the Hogwarts Express, has been preserved.)

Overhead, the shed's double-barrel-vaulted glass ceiling is being reglazed (work should finish later this summer) and will be fitted with 1,400 photovoltaic panels that will top-up the station's electricity supply. Steelwork has been repainted

in appropriate colors, and refurbishments to the office block in the station's Eastern Range—which houses railway staff—were completed in 2009.

The only major element in JMP's master plan that's still to begin is the demolition of the existing ticket hall—a low, unloved structure that was tacked onto the front of King's Cross station in the 1970s. This currently mars the view of the two elegant yellow-brick arches of the station's original Victorian facade. After the Olympic Games, it will be replaced by an open plaza, slated to open next year.

The station's new look fits neatly into the grand scheme for the redevelopment of the wedge of land to the north of the station, bordered by railway lines and bisected by canals, that—in the heyday of the railways—was home to a cluster of freight yards and warehouses.

A separate master plan, designed by the London-based firms Allies and Morrison and Porphyrios Associates, will see the construction of 8 million square feet of mixed-use development on the 67-acre site—including 2,000 homes, 23 new or refurbished office blocks, and a bevy of shops and restaurants. And King's Cross—already a transport hub served by six Underground lines—will provide vital access.

Project Credits

Project King's Cross Station Western Concourse

Client Network Rail

Architect and Master Planner John McAslan + Partners, London—John McAslan, Hiro Aso, Simon Goode, Pauline Nee (key project team); Jasmine Wadja, Mark Bell, Katherine Watts, David Jackson, Aidan Potter, Adam Brown, Philip Veall, Louise Hansen, Sascha Stscherbina, Michael Mason, Dean Kirkwood

Engineer for Roof and Platform

Refurbishment and Footbridge to Station

Tata Steel Europe

Engineer for Western Range and New Concourse Arup

Architect for King's Cross Square

Stanton Williams

Contractors Laing O'Rourke and Costain Group joint venture (Eastern Range Building); Carillion (Platform 0); Vinci Construction UK (platform refurbishment, footbridge, service yard, Western Range, and new concourse); Kier Rail (roof refurbishment); Osborne Co. (Suburban Train Shed roof repainting)

Cost Consultant Network Rail's in-house commercial team

Size 7,500 square meters (80,730 square feet)

Cost £547 million (\$886 million, total cost for the multiphase King's Cross station redevelopment, of which the Western Concourse was a part)

Subcontractors

Balustrade Design Rationale; Marsh Bros. Engineering Services (repairs)

Blockwork Walls Swift Brickwork Contractors

Booking Hall Fit-Out A. Edmonds & Co.

Conservation Works Cliveden Conservation

Ceilings MPG Group (corridor, plaster); Design Rationale (stainless steel cladding)

Doors Houston Cox (fire doors); Prima doors (steel doors)

Flooring Gormley Group (Western Concourse granite flooring)

Glazing LeeWarren (glass-wall cladding to public toilets); Skylight Solutions (roof light)

Heritage Plasterworks Simplicity Mouldings

Masonry Gormley Group (Granite and York stone); Pyramid (brickwork, copings, sills, and cornices)

Mechanical/Electrical NG Bailey

Metal Hatches Bilco

Mezzanine Building Shell Swift Horsman

Painting K&M McLoughlin Decorating

Toilet and Shower Installation Houston Cox

Roofing Mundy Group (Western Range building roofing); Seele (Western Concourse roof structure and cladding)

Screeding Advanced Screeding

Shopfront Screens Houston Cox

Soft Flooring AC Flooring

Southern-end Infill Glazing WrightStyle

Handrails Design Rationale

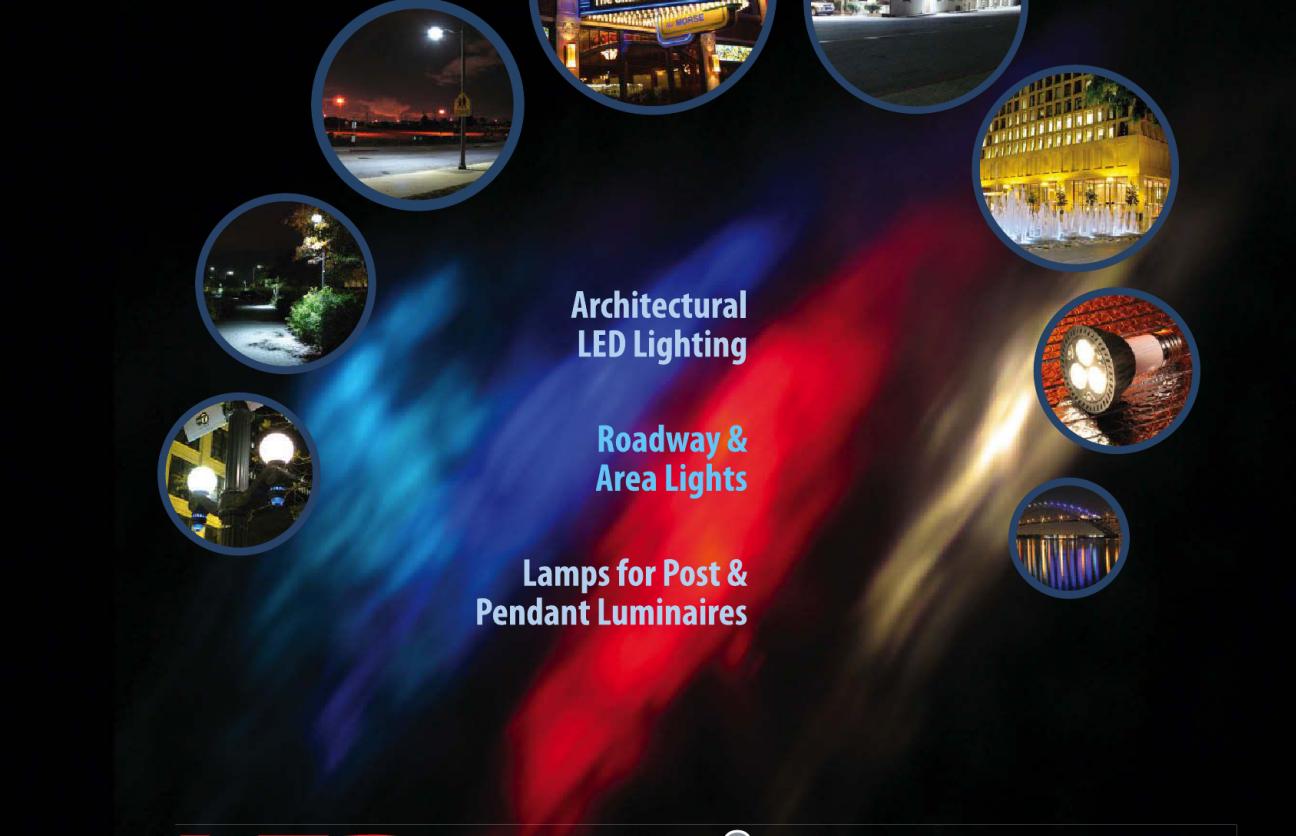
Station Overlays LeeWarren

Storage Essex Woodcraft; Piper Joinery (storage, cabinets, tables)

Structural Works McGee Group

Walls Design Rationale (stainless steel cladding); MPG Group (plaster)

Wayfinding Houston Cox (signage)



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EMS 27

BRONX, N.Y.

WXY ARCHITECTURE + URBAN DESIGN





TEXT BY IAN VOLNER
PHOTOS BY PAUL WARCHOL

THE BRONX NEIGHBORHOOD of Woodlawn is near enough to New York's border that if you trip one way, you'll fall over the city line. Trip another and you may hit your knee on a tombstone: 300,000 of them occupy Woodlawn Cemetery, on the area's southern periphery.

Woodlawn's living residents, outnumbered as they are, are a hearty bunch. Though living far from the bright lights of Manhattan, these mostly middle-class and immigrant strivers rely on municipal services provided by City Hall downtown. Now, with the arrival last August of an innovative Emergency Medical Services (EMS) station designed by New York-based WXY Architecture + Urban Design, Woodlawn has found itself with one of the brightest jewels in the city's infrastructural crown.

"A lot of people in EMS, they think of this as being like the flagship station," says lieutenant George Trager, a paramedic attached to the new EMS 27 on East 233rd Street. Before last summer, Trager and his 60-odd colleagues were scattered in facilities across the city, many of which were cramped, aging, and inadequate. The difference between their old and new digs, says the 16-year veteran, is "like night and day."

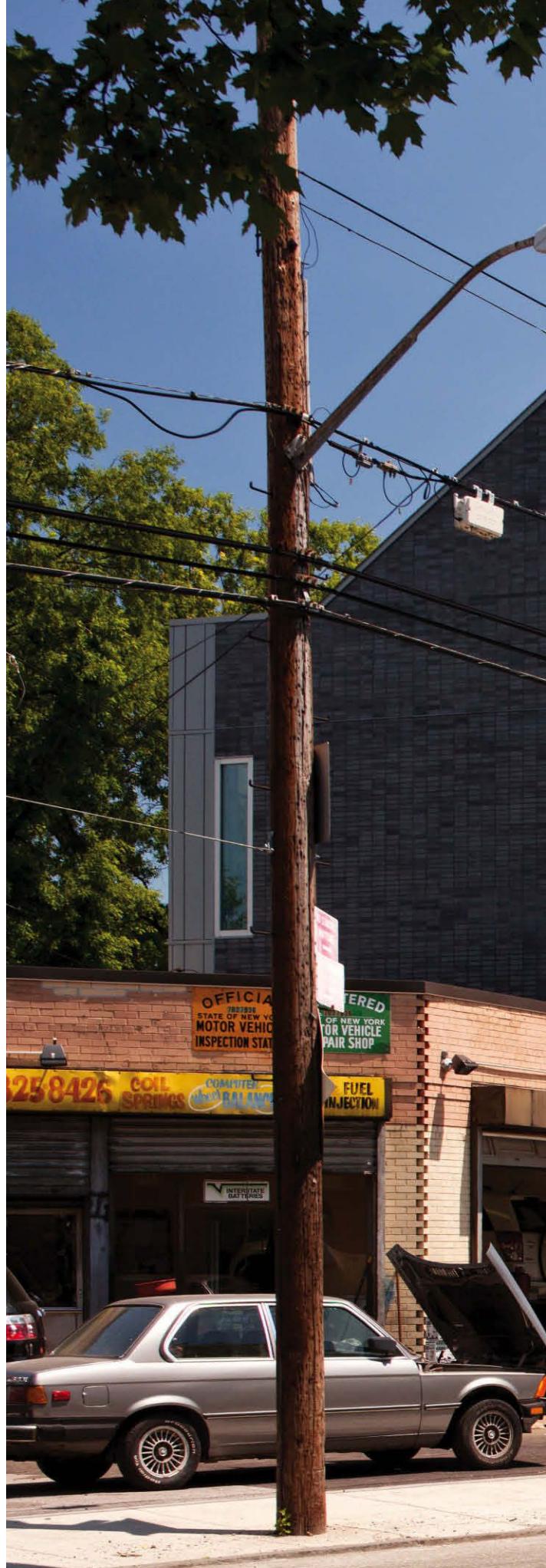
EMS stations are peculiarly hybrid creatures. Combining various elements of a firehouse, a clubhouse, and a parking garage, they have to serve as all-purpose depots for roving bands of EMTs and paramedics on 24-hour patrol. Ambulances return to refuel and resupply; crews check in at the beginning and end of each eight-hour shift, and senior staff stop by to monitor operations in the field.

For the new Bronx location, the designers and assorted governmental stakeholders were charged with stuffing these complex functions into a very tight envelope. EMS 27 occupies a footprint of less than 3,000 square feet and is wedged between an auto shop and a dusty scrap lot. Like the nearly century-old fire station it replaces, the new building runs through the narrow block from front to back, facing onto a high-traffic corridor on one side, and a quiet residential stretch of Woodlawn on the other.

Claire Weisz, AIA, founding principal (with partner Mark Yoes, AIA) of WXY, was acutely sensitive to this contextual double bind. "We were concerned that the neighborhood, which had fought for this building, didn't end up with the same facades for both the houses and the [main] road," she says. Accordingly, EMS 27 presents two faces to the world: to its neighbors, it's a demure composition of glass and zinc panels, easily mistaken for a contemporary condominium; for drivers on the busy thoroughfare, its row of raked, irregular louvers establishes a lively play of sun and shadow that's even more striking at 40 miles an hour.

The shimmering brise soleil, hoisted over a base of glazed brick, helps to mask a complex mechanical system that nearly bursts out of the building frame. "No inch of the building is wasted here," notes Samir Shah, program director for the Department of Design and Construction (DDC), the city's representative on the project. Everything from a control booth and computer room, to decontamination units, to a narcotics storage closet with a blood-vessel-scanning lock are all stacked one atop the other on the building's five above- and below-ground floors. A training room that doubles as a dining space in the penthouse and a connecting outdoor terrace (unique to New York's EMS stations) add just a touch of luxury, as does a fitness room below—though all, in an ironic instance of *momento mori*, command sweeping views of the nearby graveyard.

The building's height, itself unusual for an EMS station, gave WXY the chance to make a virtue of the difficult site and hefty program. "By being that compact," Weisz says, the EMTs "get to realize more social engagement." By that, she means that the station's overlapping functions—punctuated in WXY's scheme by internal overlooks and atria—foster human interaction. The same applies outside the building's walls, which the architects strove to open up with more apertures, more glass, and less bricks and mortar. "At the same time we were trying to make this a private space, we didn't want to isolate them [the personnel] from the neighborhood," she says. "We had to make that leap."



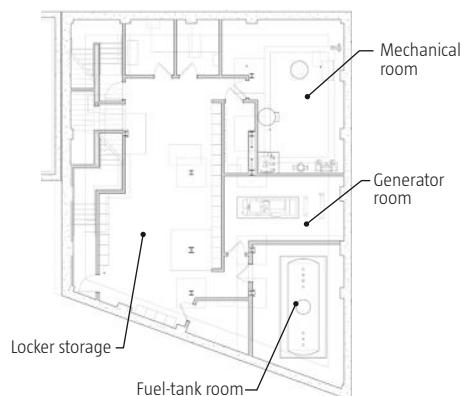
Located in the Woodlawn neighborhood of the Bronx, EMS Station 27 (previous spread) serves as a base for emergency-services personnel to check in before shifts, and to restock their vehicles. Sited between an auto-body shop and a scrapyard, the team at WXY Architecture + Urban Design strove to make each of the façades different and appropriate for the context, which ranges from a busy thoroughfare on the south side (this image) to a quiet neighborhood street on the north.



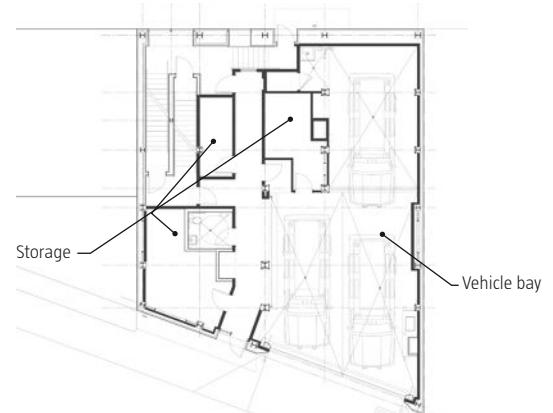


Serving the diverse needs of the EMS workers in a tight program meant creating a series of high-traffic and often multifunctional spaces. The second-floor Lieutenant's office (above) serves as a command center and allows (via an internal window) for oversight of the vehicle bay (opposite top) on the ground floor. At the penthouse level, a landing (opposite bottom) offers access to the training room (which doubles as a dining room and boasts a kitchen) and an outdoor terrace beyond. The building's largely quiet color palette is broken up by a vivid orange internal stair (opposite right) that serves all levels.

Cellar-Level Plan

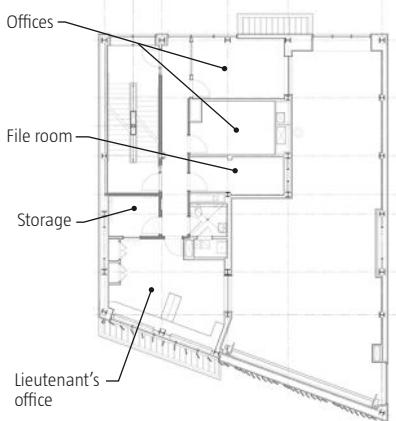


Ground-Floor Plan

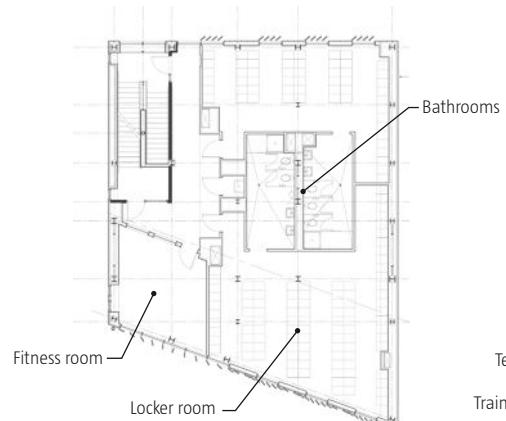




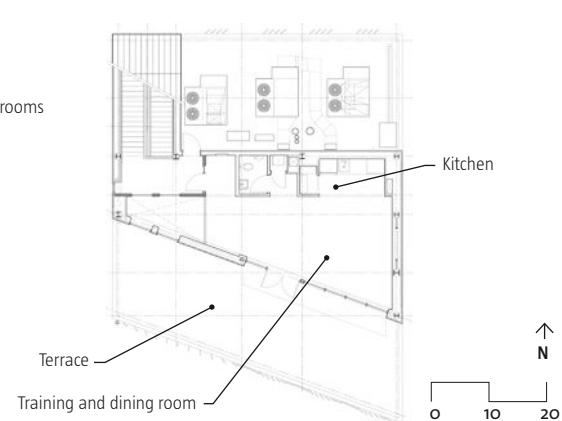
Second-Floor Plan



Third-Floor Plan



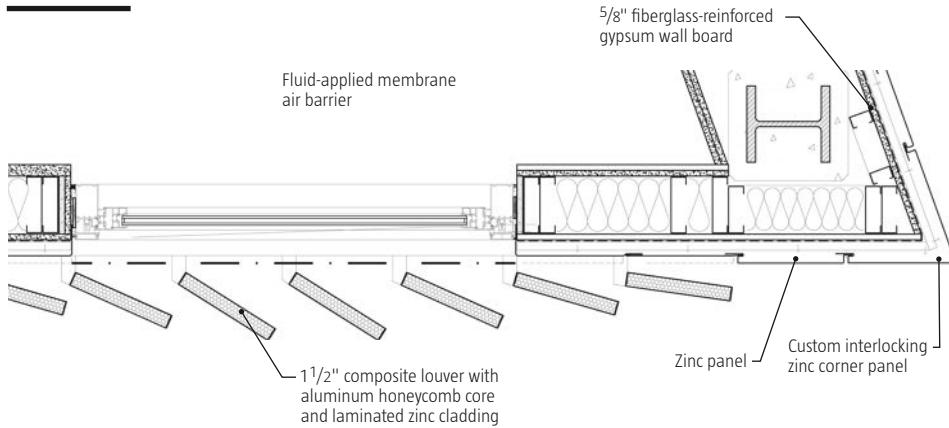
Penthouse-Level Plan





Rear façade

Louver Detail



TOOLBOX: EXCELLENCE IN DESIGN AND CONSTRUCTION

Ramsey Dabby is chief architect for New York City's Fire Department (FDNY), the parent agency of the city's Emergency Management Services (EMS). As point man for the FDNY on the Bronx project, he worked hard to make the building the pride of EMS—but being innovative, he notes, isn't always easy. "Pushing the envelope" is a tricky phrase in the department," Dabby says.

Across New York, there has been a renewed effort in recent years to make design quality a priority in public buildings. But in an environment rife with institutional forces, design can be a chit in the political process.

In the 1990s, FDNY's EMS stations were designed on a "prototype" model, as Dabby describes it—"solid, substantial buildings made out of masonry." Starting in 2006, however, the Department of Design and Construction (DDC) codified its Excellence in Design and Construction (EDC) criteria: As with the federal Design Excellence program, this protocol places a stronger emphasis on the unique architectural character of city projects, and that opened the door for emerging firms like New York-based WXY Architecture + Urban Design. "Design excellence was set up to say, 'Now take these

written rules, but try something new,'" says principal Claire Weisz, AIA.

That made the stakes in Woodlawn particularly high. The FDNY has built only a handful of EMS stations since the EDC program made the '90s prototype obsolete, so the design for EMS 27 can help make the case for a new generation of EMS facilities. City Hall also recognized the importance of the project: The DDC's Samir Shah notes that it's been a "mayoral priority."

The completed building seems to satisfy the hopes of the EMTs and paramedics who work there. "This makes us finally feel respected," says EMS 27's Lt. George Trager, who hopes that subsequent stations will follow EMS 27's lead. Shah says he certainly expects some features—augmented social spaces upstairs and a basement (which is not currently standard in EMS stations) that separates the building systems from the already-crowded workspace—to become a frequent request from EMS end-users in future. But the FDNY's Dabby is quick to stress the fundamentals. "What you should be doing is creating houses that can take abuse," he says. "These aren't for ballerinas."

Project Credits

Project EMS 27, Bronx, N.Y.

Client FDNY; consultant contract was held by NYC Department of Design and Construction

Architect WXY Architecture + Urban Design, New York—Claire Weisz, AIA, Mark Yoes, AIA, Layng Pew, AIA (principals); Adriel Mesznik, Christopher Kupski, Severn Clay, Justus Asselmeyer (key personnel)

Mechanical/Electrical Engineer Buro Happold—Michael McGough (engineer of record)

Structural Engineer Buro Happold—Craig Schwitter (engineer of record)

Civil Engineer HAKS—Ken Mangam (engineer of record)

Geotechnical Engineer URS Corp.

Construction Manager The Liro Group and HAKS (joint venture)

General Contractor Brickens Construction

Lighting Designer Buro Happold

Size 13,000 square feet

Cost \$8.6 million

Materials and Sources

Adhesives, Coatings and Sealants Sika Corp. usa.sika.com; USG Corp. (Sheetrock) usg.com; Dow Corning dowcorning.com; Emseal emseal.com

Air Barriers and Waterproofing W.R. Grace & Co. (Perm-a-Barrier) grace.com

Appliances General Electrics (Profile range, fridge, microwave) geappliances.com; Scotsman (ice maker) scotsman-ice.com

Ceilings Painted metal deck; custom-fabricated stainless steel panels

Concrete Jenna Concrete Corp.

Exterior Wall Systems Rheinzink (Interlocking zinc panels) rheinzink.com

Flooring Forbo Flooring Systems (Marmoleum dual tile) forbo-flooring.us

Glass PPG Industries (Starphire and Solarban) ppg.com; Saiti First (SuperLite II-XL) saiti.com

Gypsum National Gypsum (Gold Bond Gypsum, Hi-Abuse XP, and Shaftliner) nationalgypsum.com

HVAC AAON aaon.com; Mitsubishi Electric Cooling & Heating mehvac.com; Trane trane.com

Insulation Roxul CavityRock roxul.com; Johns Manville jm.com; Firestone Building Products (insulation board) www.firestonebpc.com; Dow Chemical Co. (Styrofoam Insulation Board) building.dow.com

Lighting Litecontrol litecontrol.com; LDPI ldpi-inc.com; Philips Lightolier lightolier.com; Gammalux Systems gammalux.com; Eclipse Lighting eclipselightninginc.com; Encore encorelighting.com

Masonry and Stone Endicott Clay Products Co. (Manganese smooth Ironspot brick) endicott.com; Trenwyth (Trendstone ground face CMU) trenwyth.com

Metal Composite metal deck slabs; Light-gauge metal framing; Steel railings and miscellaneous trim

Millwork Mitchell's Restoration

Paints and Finishes Sherwin-Williams Co. sherwin-williams.com; Tile Ceramica Bardelli bardelli.it; American Olean americanolean.com

Plumbing and Water System Burnham Commercial (boiler) burnhamcommercial.com; American Standard Brands (fixtures) americanstandard-us.com

Roofing Firestone Building Products (RubberGard EcoWhite EPDM) www.firestonebpc.com

Structural System Structural steel with composite metal decking

Wayfinding Deb Romain Consulting debromain.com

Windows, Curtainwalls, and Doors Kawneer (storefront) kawneer.com; Saiti First (fire-rated doors and lites) saiti.com;

Marathon High Performing Doors (Hydrarol overhead door) marathondoors.com; McKeon Door (overhead fire door) mckeondoor.com; TNA Architectural Products (hollow metal doors)



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UNITED STATES FEDERAL BUILDING AND COURTHOUSE





TUSCALOOSA FEDERAL BUILDING AND COURTHOUSE

TUSCALOOSA, ALA.
HBRA ARCHITECTS

TEXT BY EDWARD KEEGAN, AIA
PHOTOS BY TIMOTHY HURSLEY

TUSCALOOSA WAS ONCE THE capital of Alabama, but now its regional importance comes from the state's flagship university and its powerhouse football team. And while the design tenor of the Crimson Tide's campus has strayed far from its 1828 beginnings—the University of Alabama was modeled on Thomas Jefferson's University of Virginia—Chicago-based HBRA Architects have revived classical precedents for another locally significant civic structure, the new Tuscaloosa Federal Building and Courthouse.

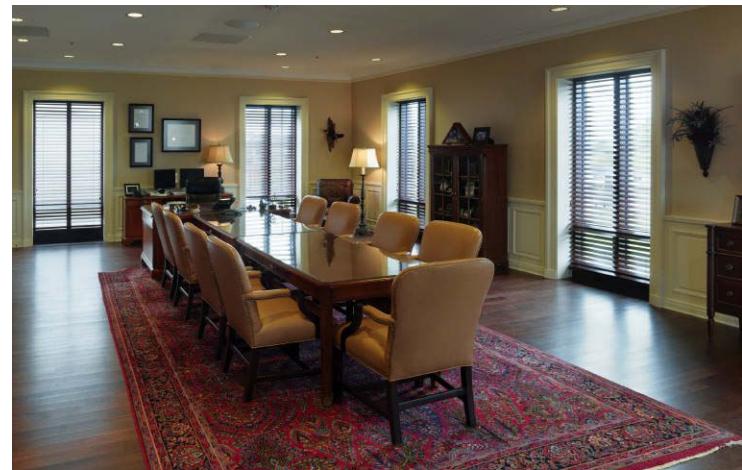
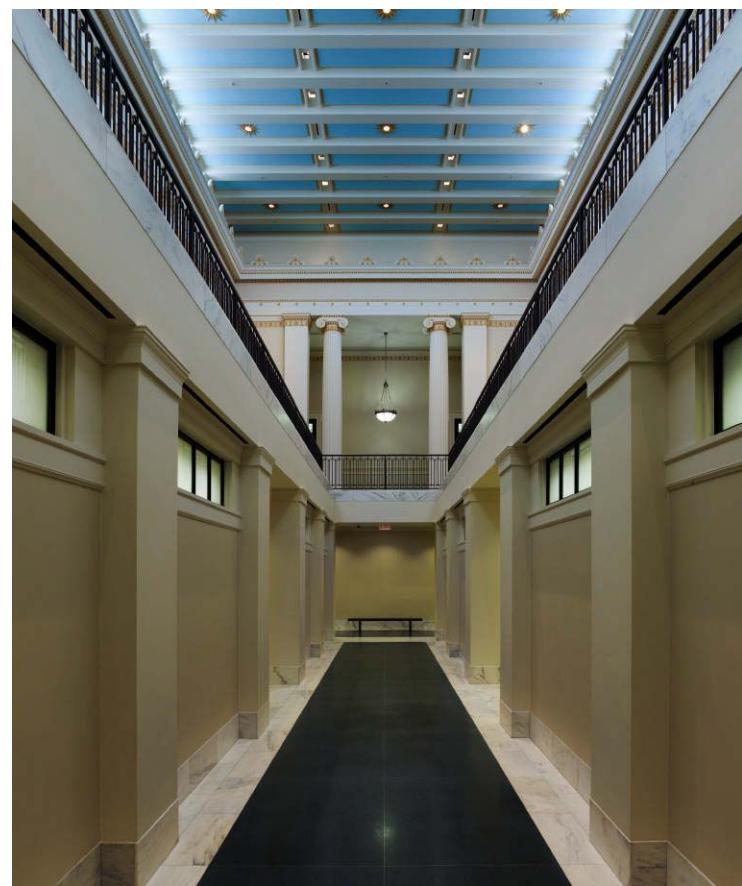
The 127,000-square-foot building is part of the U.S. General Services Administration's (GSA) Design Excellence program, and U.S. District Court Judge Scott Coogler—who served as the de facto client heading a group of the structure's tenants—was clear about the goals for the \$47.8 million project. The building had to look like a courthouse particular to its southern locale—which meant that columns, steps, and masonry were *de rigueur*. “This is not my first courthouse,” Coogler says. “People need to have the sense they’re coming to a place of justice, not an office building.”

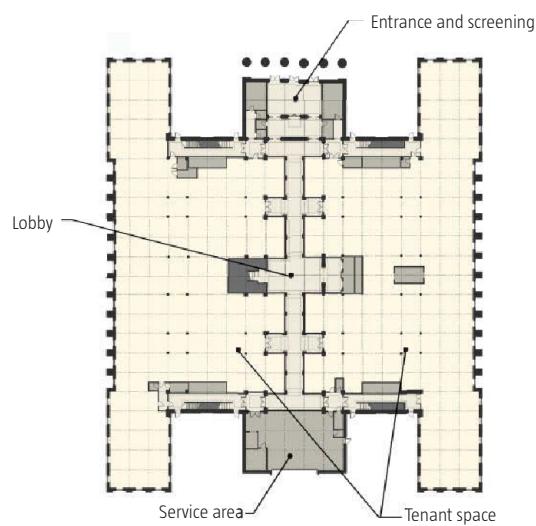
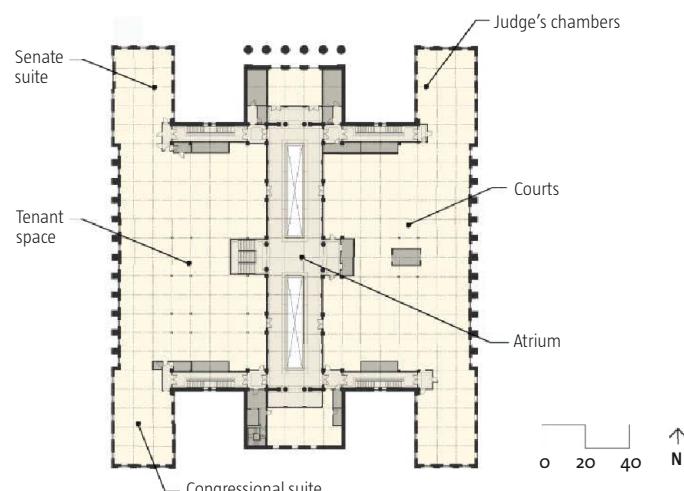
That seems like a simple prescription, but the program proved more complex. The building has multiple tenants, including the U.S. District Court, the U.S. Bankruptcy court (both of which required courtrooms and support spaces), U.S. Sen. Richard Shelby’s, R-Ala., offices, the U.S. Probation Office, the U.S. Marshals Service, the U.S. Attorney’s Office, the GSA, congressional offices, the Social Security Administration, and the Federal Bureau of Investigation.

“There were certain expectations that the building would have a clear and unequivocal relationship to classical architecture,” says Aric Lasher, AIA, director of design at HBRA. The specific model for the detailing of the building’s portico, is the Greek Temple of Zeus at Nemea. “Karl Friedrich Schinkel, Peter Behrens, and Mies van der Rohe all admired it,” Lasher says—naming three architects who practiced in highly varied modes of aesthetic production during the 19th and 20th centuries. That temple includes the three primary orders, two of which are used by HBRA for the Tuscaloosa courthouse. The

The entrance to the Tuscaloosa Federal Building and Courthouse (previous spread) is marked by massive Doric columns— influenced by the Greek Temple of Zeus at Nemea— made from Indiana Limestone. The acroteria that mark the angles of each pediment use classical detailing but were designed to work in concert with the building's brushed-aluminum roof. Inside, the first-floor lobby (opposite top) is lined with Doric pilasters. And while the building houses tenant spaces for several federal agencies, the second floor's eastern wing is dominated by courtrooms (opposite middle) and judges' chambers (opposite bottom).





South–North Section Elevation**First-Floor Plan****Second-Floor Plan**

Doric is deployed in the center-bay entrance portico while the Ionic is used in pilaster form in the wings. The columns on the interior are modeled after an Ionic order used at the Erechtheion in Athens.

While Greek forms are typical of many federal buildings from the early years of our Republic, there are some practical reasons for choosing Greek over Roman precedents in this particular building. "The rigid modularity of Greek Classicism lends itself to modern space planning," Lasher says. "And GSA allocations are very precise." To accommodate these considerations, the building is based on a 60-centimeter grid—the metric equivalent of a 2-foot module.

The building is organized around a central, two-and-a-half-story-tall atrium that bisects the building into east and west wings. The allocation of uses is clear: On the first floor, the Social Security Administration is on the right, jury assembly is on the left; upstairs, the FBI and Sen. Shelby's offices are on the right, and the courts and judges' chambers are on the left. Public stairs on either side of the entrance quickly access the chambers of the U.S. Judge and the senator, while centrally located elevators and a double-run stair lead to the second-floor courtrooms and other offices. The 165-foot-long atrium is relatively narrow on the first floor—only about 11 feet in width—but expands to 33 feet on the piano nobile. It's the second floor where the building's Classicism really sings—with Ionic columns flanking spaces in each

of the cardinal directions and 16 panels of public art that tell local history in an accessible, realistic style.

"The courtroom is 'standard'; the space is what's allocated by law," Coogler says, "but the quality shines through. It's appropriately nice—not over the top." While the interior courtroom spaces are finished in dark, but warm, wood paneling, materials are used in a methodically economical way. "The wainscot in my chambers is painted," Coogler says. The same sort of sensible decision making informs the entirety of the building, inside and out.

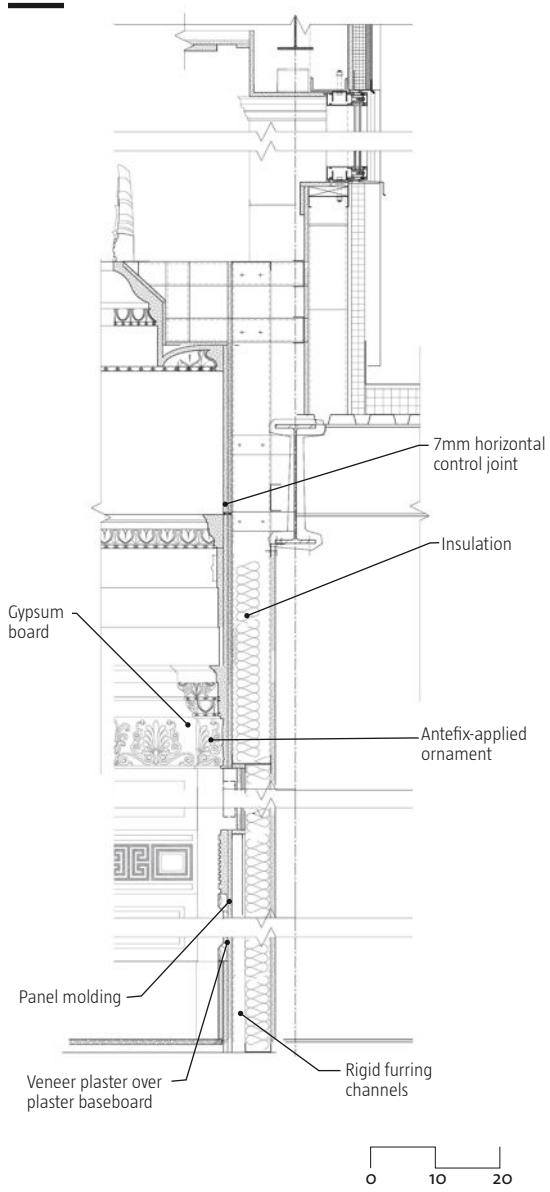
If there's one weakness to the design, it's the domination of the second-floor public spaces over those on the first floor. The central space on the ground floor is relatively long and narrow—not much more than a decently detailed corridor that's open to the wider space above. While there are three wide, gracious stairs that allow access to the double-height space above, many of the building's users visit the Social Security Administration offices on the ground level and have little need to walk upstairs and see the building's signature space.

It's the only false note in a public building that aspires to—and attains—a grand civic gesture for Tuscaloosa. "I've heard architects say you have to change with the times," Coogler says. "This building is built with different technology than in the 1920s, but it's the style of a federal courthouse. It's not a rocket ship—that would be an office building."



The second-floor atrium space is a generous 33 feet wide and is lined by 16 oil-painted panels by artist Caleb O'Connor, which depict major events in the region's history. Natural light from the clerestory windows highlights the classical detailing, much of which was hand-painted. The space is open to the public, and it looks down onto the first-floor lobby corridor.

Detail



TOOLBOX: TRADITIONAL DETAILING

Constructing a genuinely classical civic building in the 21st century has its challenges. "On details, we know what's possible and how to allow for artisanal differences," says HBRA director of design Aric Lasher, AIA. Even though the building has quite a variety of handcrafted, custom ornamental elements, principal Craig Brandt, AIA, notes that there's a high degree of repetition that lends itself to prefabrication, where variation in quality can be best controlled off site. Hand-carved molds were used to cast the moldings, which were then hand-painted. A full-scale mock-up program ensured that architects and builders were all on the same page.

Finishes were used where they have the greatest significance and can be appreciated, Lasher explains. The GSA's Art in Architecture program allowed a budget of almost \$250,000 for site-specific art—which led to the narrative painting cycle that fills the east and west sides of the second-floor atrium. Judge Scott Coogler worked as a member of the GSA-appointed arts council to help develop the criteria for the paintings. "We wanted to include the history of the area, the courts, and the country," he says. The architects and the judge originally thought that the budget might only sustain smaller pieces, but artist Caleb O'Connor chose to fill the panels between the pilasters, resulting in 16 works of about 9 by 13 feet apiece.

The subjects of the paintings include the burning of the University of Alabama's library during the Civil War, Governor George Wallace's infamous blocking of the schoolhouse door to blacks in 1963, famed football coach Bear Bryant, and the devastation of the April 27, 2011, tornado. "We're not aware of anything at this scale since the WPA," Brandt says.

Another important consultant for HBRA was sculptor Kent Bloomer, who worked closely with the architects to develop the building's ornamental details, including the acroteria and the ornamentation at the eave. "It's classical, but it's conventionalized," says HBRA principal Dennis Rupert, FAIA. The roof is brushed aluminum, a relatively inexpensive but durable material in Tuscaloosa's climate. "Kent worked out the details based on the techniques of fabrication, transforming the ornament to integrate the materials."

Project Credits

Project Tuscaloosa Federal Building and Courthouse, Tuscaloosa, Ala.

Client U.S. General Services Administration, Region 4

Architect HBRA Architects, Chicago—Thomas H. Beeby, FAIA (lead designer); Kirsten Beeby (interior designer); Craig Brandt, AIA (project architect); Aric Lasher, AIA (project designer); Dennis Rupert, FAIA (project manager); William Mahalko, Jerry Wright (associates); Neil Sondgeroth, Jochen Silvetti-Schmitt (architectural professional team)

Exterior Ornamentalist Kent Bloomer Studio

Interior Murals Caleb O'Connor

Courts Consultant RicciGreene Associates

Mechanical Engineer MW/Davis Dumas & Associates

Structural Engineer MBA Engineers

Electrical Engineer Ray Engineering Consultants

Civil Engineer LBYD

Geotechnical Engineer TTL

Construction Manager O'Connor Construction Management (Agent); KBR Building Group and Harrison Construction joint venture (At Risk)

Landscape Architect Nimrod Long and Associates

Lighting Designer Claude R. Engle, Lighting Consultant

Acoustic Consultant JaffeHolde

Elevator Consultant Lerch Bates

Size 127,000 square feet

Cost \$47.8 Million

Materials and Sources

Acoustical System G&S Acoustics gsaoustics.com

Adhesives, Coatings, and Sealants The Dow Chemical Co. dow.com

Carpet Interface interfaceglobal.com

Ceilings Armstrong armstrong.com

Fabrics KnollTextiles knolltextiles.com

Flooring Alabama Marble Co.

alabamamarblequarry.com; Terrazzo

& Marble Supply Cos. tmsupply.com;

American Olean americanolean.com

Glass Viracor viracor.com; Bendheim bendheim.com

Gypsum National Gypsum Co.

nationalgypsum.com

HVAC Trane trane.com

Insulation Atlas Roofing Corp.

atlasroofing.com; Hunter Panels

hpanels.com

Lighting Edison Price Lighting epl.com; Historical Arts & Casting historicalarts.com; Lutron Electronics Co. lutron.com

Masonry and Stone Evans Limestone Co. evanslimestone.com

Millwork Mortensen Woodwork mortensenwoodwork.com

Paints and Finishes Benjamin Moore & Co. benjaminmoore.com

Roofing Merchant & Evans ziprib.com

Seating Knoll knoll.com; Kivets kivets.com

Windows and Doors Wausau Window and Wall Systems wausauwindow.com; Dawson Doors dawsondoors.com;

Maiman Co., an Assa Abloy Group Co. maiman.com; Hope's Windows

hopeswindows.com

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STARBUCKS COFFEE AT DAZAIFUTENMANGU OMOTESANDO

DAZAI FU, JAPAN

KENGO KUMA & ASSOCIATES

TEXT BY KATIE GERFEN
PHOTOS BY MASAO NISHIKAWA

ROUGHLY 2 MILLION people visit the Dazaifu Tenmangu shrine in Japan's Fukuoka prefecture each year, and most approach on foot, following a paved street through a historic district. Among the shops that sell lucky wooden bullfinch carvings and sweet bean-paste-filled rice cakes called umegae mochi, there is a new, and familiar, face: the stylized siren of Starbucks.

In Dazaifu, however, the store does not follow the formula used by the coffee conglomerate's in-house designers, a group that is stationed in 14 offices worldwide. The building owner, the Manten Corp., asked that Starbucks work with Tokyo-based Kengo Kuma & Associates (KKA) on the interior. The partnership was a good fit. "We found that his [Kuma's] design sensibility matches our aesthetic point of view," says Arthur Rubinfeld, president of Starbucks global development.

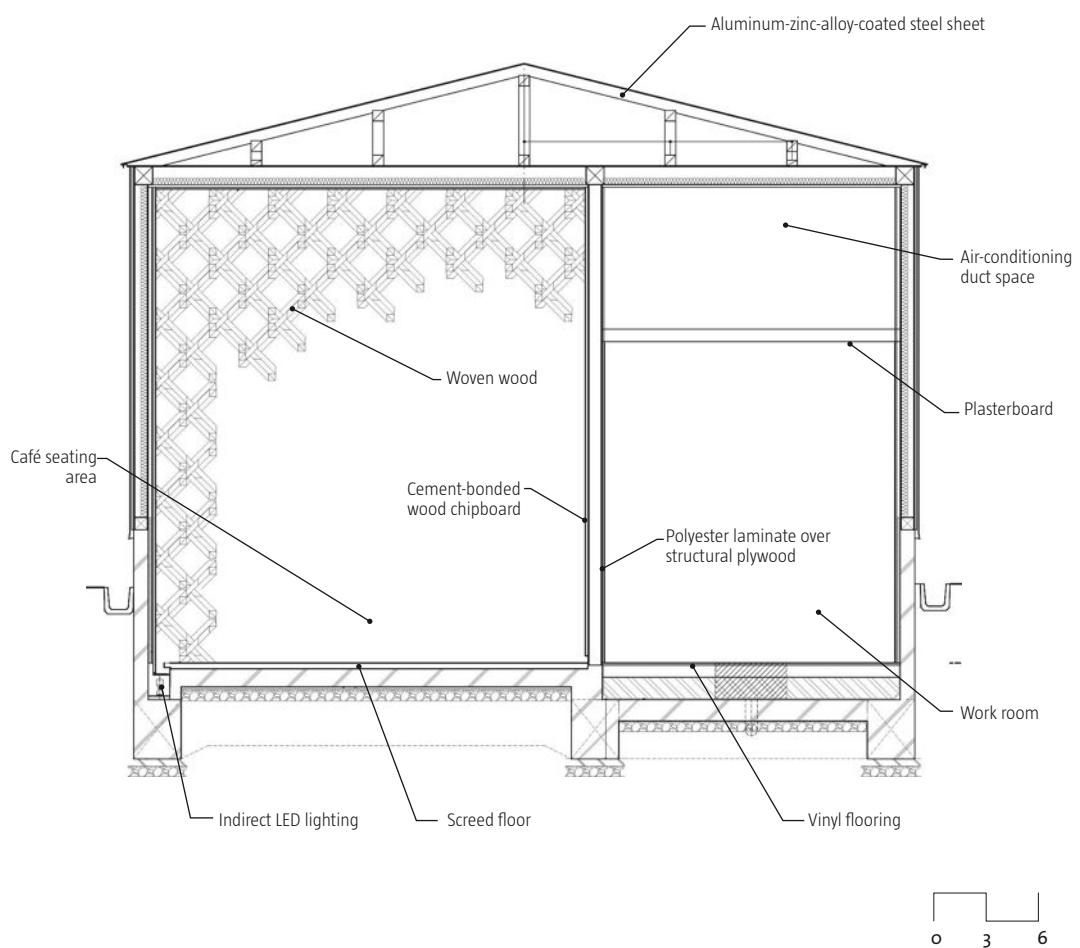
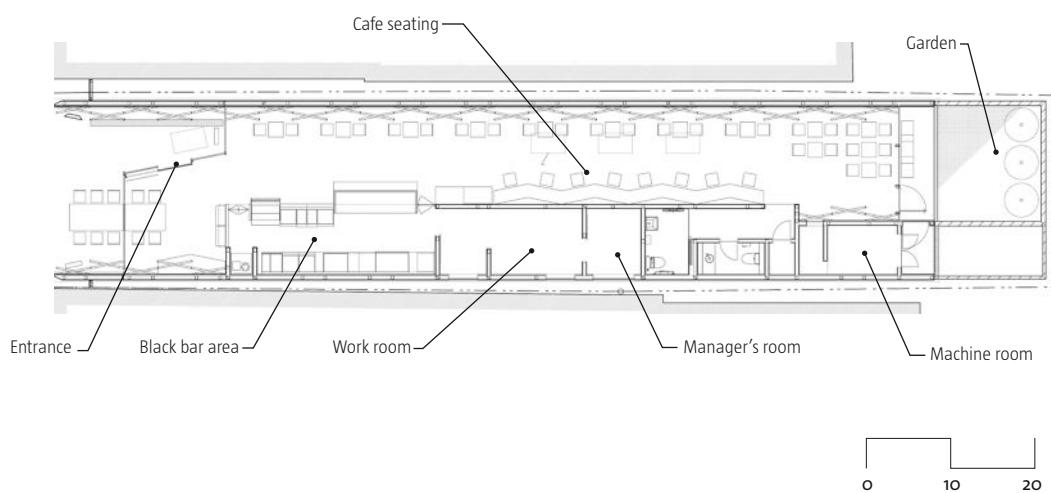
The Dazaifu store "is located at the main approach to one of the most prestigious and popular shrines in Japan," says KKA principal Kengo Kuma, Hon. FAIA. "The path is lined with old, low-story, traditional Japanese houses and shops, so we thought our design of Starbucks would best harmonize the scene." Using a palette of modest materials, Kuma's team designed a single-story enclosure made from razor-thin, coated-steel sheets. Inside the 210-square-meter (2,260-square-foot) café, a screed floor and chipboard walls and ceilings are impeccably detailed, but these fade to the background behind the structure's showcase: 2,000 woven cedar sticks.

The principle, Kuma says, is to "start from a small, human-scale unit ... [and carry it through] to the whole. It is one of these ideas of ours that a structure should be built up that way; everything is, in fact, made of tiny particles." Each stick is 6 centimeters (2.3 inches) square in section, and ranges in length from 1.3 to 4 meters (4.3 to 13 feet). The pieces are woven together on the diagonal; notches carved into the sides of the sticks allow them to fit snugly together, and they are held in place with thin stainless steel pipes. The units build upon each other to form a latticework that covers the length of one wall and stretches across the ceiling plane. "The wooden weaving expresses a sense of depth," Kuma says, "and customers of the café might feel [that] they drink coffee in a forest."

Starbucks "continue[s] to receive comments on the store's beautiful design," Rubinfeld says. And though "grande no-foam triple-shot latte" might not be in the typical Japanese phrase book, it might be worth looking up before planning a trip to Dazaifu.

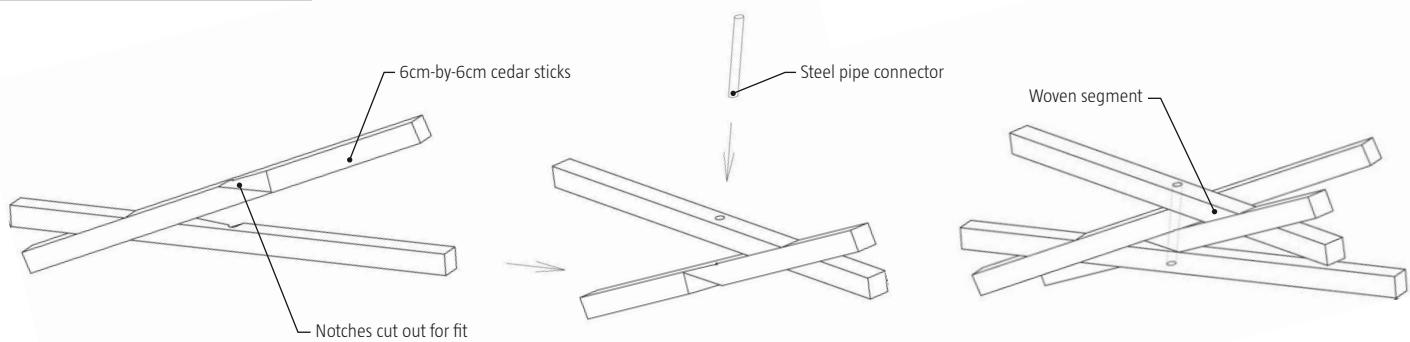




West-East Section**Floor Plan**

Located on the approach to one of Japan's most popular shrines, the Starbucks store is scaled to fit into the fabric of the historic district (previous spread). Inside, the café is dominated by a decidedly modern sculptural diagonal latticework of 2,000 cedar sticks (this image). The store's design does have historic precedence: The woven-wood technique—which Kengo Kuma's firm has explored, more orthogonally, with its Chidori modular furniture and at the Prostho Museum Research center in Kasugai-shi, Aichi, Japan—is based on a traditional Japanese toy.



Woven-Wood Exploded Axonometric**Project Credits**

Project Starbucks Coffee at Dazaifutenmangu Omotesando, Dazaifu, Fukuoka Prefecture, Japan
Client Manten Corp.
Architect Kengo Kuma & Associates, Tokyo
Structure Jun Sato Structural Engineers
Facility Design Tosai Corp.; Kyu-den Ko Corp.
Construction Matsumoto-gumi Corp.
Lighting Izumi Okayasu Lighting Design
Size 210.03 square meters (2,260 square feet, total floor area)

Materials and Sources

Ceiling Plasterboard
Flooring Screed floors; vinyl flooring
Glass Toughened glass (t10, t15)
Hardware Steel pipes
Lighting Indirect LED lighting
Roofing Aluminum-zinc-alloy-coated steel sheet
Structure Wood; structural plywood
Walls Cement-bonded wood chipboard; Polyester laminate
Wood Cedar sticks



While the effect is delicate, there is an unexpectedly large amount of wood used in the space: Laid end-to-end, the total length of cedar sticks used in the space is over 2.7 miles.



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THE SCAD MUSEUM OF ART

SAVANNAH, GA.

**SOTTILE & SOTTILE AND LORD AECK & SARGENT,
IN ASSOCIATION WITH DAWSON ARCHITECTS**

TEXT BY CAIA HAGEL
PHOTOS BY ALEX FRADKIN

SAVANNAH, GA., known as one of America's oldest and best-designed cities, finds itself straddling technological innovation and old-world elegance with the thoughtful redesign of the Savannah College of Art and Design (SCAD) Museum of Art. The fluid space includes a new 65,000-square-foot expansion off of the original 1856 Greek Revival museum building, and the resulting institution exalts both historicity and new technology.

Christian Sottile, AIA, of local firm Sottile & Sottile, the lead designer of the expanded museum, worked with a core team—including SCAD co-founder and president Paula Wallace—and used charrettes to help guide the early design process. From the outset, the redesign, which won a CNU Charter Award this year, envisioned increasing Savannah's architectural significance as America's largest registered urban Historic Landmark District, with a mélange of historical preservation and contemporary innovation. "The site was previously considered a hazard for passersby before the project began," Wallace says. "As we sifted through piles of 19th-century Savannah Gray Bricks to lay the foundation of our new museum, we unearthed Civil War-era épaulettes and ammunition shells buried there among the rubble."

The existing museum building once served as the headquarters for the Central of Georgia Railway. The new addition incorporates the remnants of the rail depot next door, which was built circa 1853, and features that building's original European oak flooring as well as 70,000 repurposed bricks originally handmade by slaves hundreds of years ago. An insulated-concrete-form system was employed where walls were constructed behind the historic masonry; stainless steel helical ties were driven through the Savannah Gray Brick and into the forms; and concrete was poured to secure the ties and support the historic structure. "In terms of construction, the fragile state of the ruins presented a significant challenge: staging a major construction project within the remaining perimeter of historic brick walls that would rely upon the

new structure to provide permanent stabilization," Sottile says. "The result is a continuous oscillation between new construction and historic preservation. Ecologically, the reuse and reinterpretation of the existing historic fabric was our most compelling strategy. We believe it will have global relevance in the decades ahead."

To further offset history, the lobby boasts a 12-foot-long, virtual orientation-center touchscreen, designed by Pentagram and mounted as a table, that is the largest of its kind. "It reflects the dialogue of the real and the humane with the virtual, to forge a post-digital-era hybrid of craft and technology," Sottile says.

The main entrance, which lies at the intersection of two city streets, bisects the building, creating two wings. The east wing consists of galleries, art studios, and classrooms, as well as the Walter O. Evans Center for African American Studies, designed to house one of the most prominent collections of African-American art in the world. The west wing houses a 250-seat theater used for lectures and cultural programming. The structure is punctuated by a single vertical element marking the main entrance of the museum—a semitransparent channel-glass-encased tower. It is the first time that channel glass has been used this way. "It was ... [designed] in horizontal confluences not requiring additional support and is able to withstand the impact of hurricane winds," Sottile says. It also forms an identifying landmark for the museum, since it is the first addition to a civic landmark on the Savannah skyline in nearly 100 years.

On opening night, the gargantuan touchscreen table doubled as an interactive point of entry and a repository for empty champagne glasses—and reminded onlookers that, while firmly rooted in the dramatic history of its ancestors, the city is also gliding into the contemporary. As the party went into full swing, Paula Wallace announced to the crowd: "Alice Walker once said, ... if art doesn't make us better, then what is it for?" And the cheering drifted gently through the tree-lined streets.

The newly expanded SCAD Museum of Art is sited on a series of plazas (this image) that run between the building and the neighboring School of Architecture. On top of the southern, plaza-facing entrance is a terrace (previous spread) that is adjacent to the building's signature glass tower. The tower rises from grade on the building's north side (opposite top) and is composed of individual interlocking structural glass channels. Each glass channel is held in place with mechanical clips and then sealed with clear silicone. At the western edge of the site stand the reinforced brick walls of one of the site's historic structures (opposite bottom). No longer enclosed, the planted area serves as outdoor gallery and gathering space.



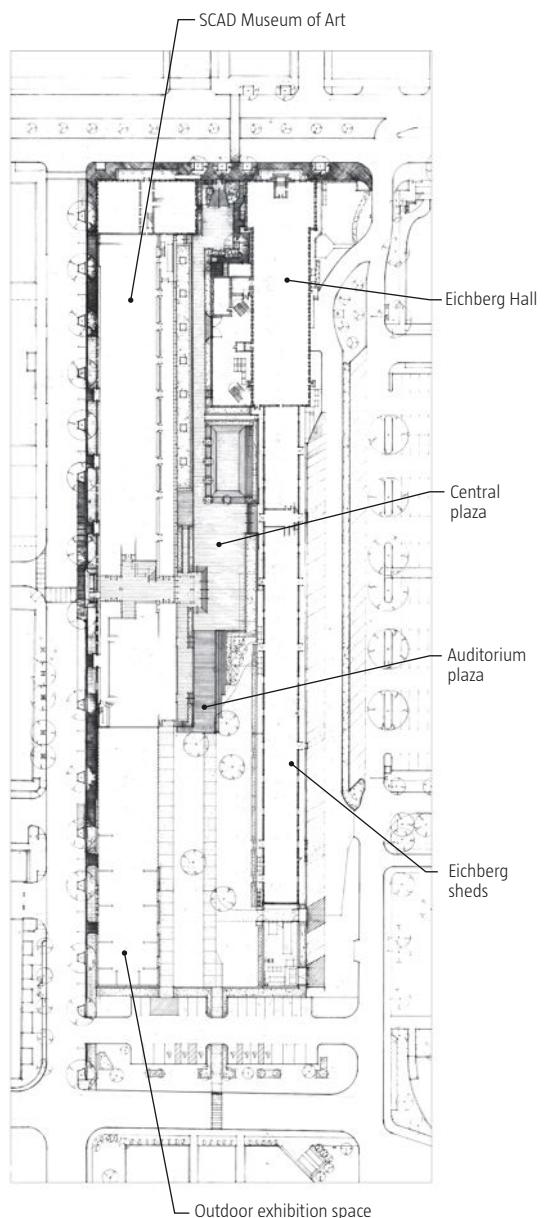


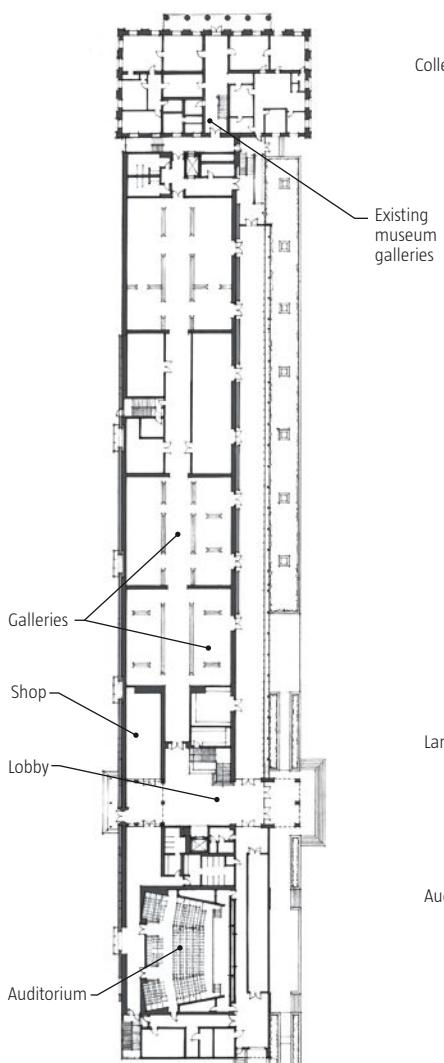
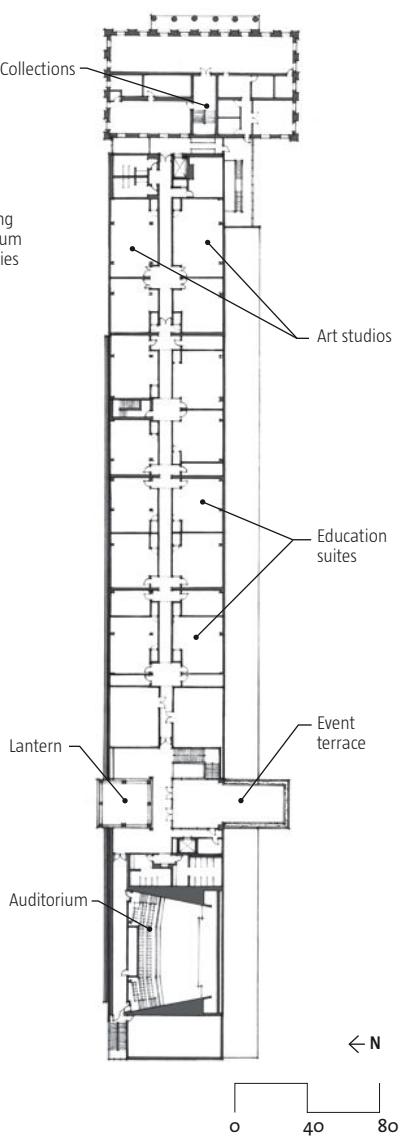


Inside the museum, the louver-covered southern façade encloses a hallway (this image) and runs the length of the 65,000-square-foot addition. This passage admits daylight and offers access to many of the new galleries, which are demarcated by arches preserved from the walls of the 1853 rail depot. The depot and existing museum building are National Historic Landmarks.



Site Plan



First-Floor Plan**Second-Floor Plan**

The museum's new galleries (this image) combine pristine spaces for displaying art with remnants of the original structure, including historic masonry walls, hand-formed period Savannah Gray Brick, and original European oak flooring from the site's 1853 rail depot. Designed to house permanent and temporary exhibitions, the galleries can be configured for painting, sculpture, or installations (opposite bottom).





Project Credits

Project The SCAD Museum of Art, Savannah, Ga.
Client Savannah College of Art and Design (SCAD)
Architect Sottile & Sottile and Lord Aeck & Sargent, in association with Dawson Architects—Christian Sottile, AIA, Joe Greco, AIA, Neil Dawson, AIA (principals)
Interior Designer SCAD Design Group—Paula Wallace, Glenn Wallace
Mechanical Engineer Newcomb & Boyd
Structural Engineer W. Hunter Saussey III
Electrical Engineer Newcomb & Boyd
Civil Engineer Wolverton & Associates
Geotechnical Engineer Terracon
General Contractor Carson Skanska
Landscape Architect Sottile & Sottile, SCAD Design Group, Wolverton & Associates, The Nelson Group
Lighting Designer SCAD Design Group, Lord Aeck & Sargent, Sottile & Sottile
Museum Consultant Quenroe & Associates
Audio Acoustics & Production Technology
Consultant James S. Brawley & Associates
Interactive Media Table Design Pentagram
Size 82,118 square feet
Cost \$26 million

Materials and Sources

Acoustical System AcousTex Specialty Products acoustex.net; Pinta Elements pinta-elements.com
Adhesives, Coatings, and Sealants Dow Corning Corp. dowcorning.com
Appliances WMF wmf.com; True Manufacturing Co. truemfg.com; The Vollrath Co. vollrathco.com; Vulcan vulcanequipment.com; Southbend southbendnc.com;

TOOLBOX: LOBBY TOUCH TABLE

New York–based design consultancy Pentagram created the world's largest mobile, freestanding interactive table (left) for the lobby of the newly expanded SCAD Museum of Art. The table's touchscreen surface serves not just as a conversation starter, but also provides digital orientation to the museum. And because it's mobile, the table can be relocated elsewhere in the building to make room for events.

Pentagram's Eddie Opara led a team that took the project from concept to completion in five months. More than 20 people can gather around the multitouch table at one time to view and share digital cards that present information about the museum's ongoing exhibitions, permanent collections, and educational programs. Visitors can rotate the cards and slide them to other users at the table with the swipe of a fingertip. They also can enlarge the surface of each to present more information and display portfolios and slide shows of related images. Even the background begs for interaction: Users can draw shapes on the surface.

The table—which was fabricated by Brooklyn, N.Y.–based Milgo/Bufkin—is made from a single sheet of folded metal and measures 12 feet long, 5 feet wide, and 34 inches high. The form of the table itself was a collaboration with industrial designer Robert Langhorn, and Opara's team developed the software for the table's interface (using C++, Cinder, and Apple's XCode) in such a way that allows SCAD to develop more programs for the table over time. The surface comprises six 55-inch self-leveling LCD screens, topped by a sheet of glass and surrounded by an infrared bar that activates the surface when touched.

This communal experience fosters collaboration among the SCAD community and museum visitors, and the table's flexibility allows SCAD to update content within the existing program to showcase temporary exhibitions.

Ice-O-Matic iceomatic.com; **General Electric Co.** geappliances.com; **LG Electronics** lg.com

Building Management Systems and Services Siemens Building Technologies buildingtechnologies.siemens.com

Ceilings USG Corp. usg.com; **Armstrong** armstrong.com

Concrete Coastal Concrete Southeast II coastal concrete.com; **Lafarge** lafargenorthamerica.com; **Metromont Corp.** metromont.com; **ARXX Corp.** arxx.com

Exterior Wall Systems Historic Savannah Gray

Brick (masonry walls); U.S. Heritage Group usheritage.com; **Metromont Corp.** metromont.com; **ARXX Corp.** arxx.com

Fabrics and Finishes Carole Fabrics carolefabrics.com; SCAD Design Group (custom fixtures and furniture); Formica formica.com; Daltile daltile.com; **IceStone** icestoneusa.com

Flooring Itlas S.p.A. itlas.it; **Tandus Flooring** tandus.com; **Lafarge** lafargenorthamerica.com; **Forbo Flooring Systems** forboflooringna.com; **Johnsonite** johnsonite.com; **EmilAmerica** emilamerica.com; **Savannah Hardscapes** savannahhardscapes.com

Furniture Izzy+ izzyply.com; **Knoll** knoll.com; SCAD Design Group (custom art viewing tables); **Steelcase** steelcase.com; **Bludot** bludot.com; **Arcanum Studios** arcanumstudio.com; **Nuno Erin** nunoerin.com;

Roche Bobois roche-bobois.com; **Lee Industries** leeindustries.com; **South of Market** southofmarket.biz

Glass Technical Glass Products (Pilkington Profil) tgpamerica.com; **W&W Glass** (Pilkington Planar) wwglass.com; **Viracor** viracor.com

Gypsum USG Corp. usg.com

HVAC Mingledorff's mingledorffs.com; **Carrier Corp.** carrier.com; **Munters** munters.com

Lighting Litelab Corp. litelab.com; **Hydrel** hydrel.com; **Lithonia Lighting**, an Acuity Brands Co. lithonia.com; **Renaissance Lighting**, an Acuity Brands Co. renaissancelighting.com; **Sistemalux** sistemalux.com; **Arteriors Home** arteriorshome.com; **Circa Lighting** circalighting.com

Lighting Control Systems Electronic Theatre Controls etcconnect.com; **Lutron Electronics Co.** lutron.com

Masonry and Stone Scottish Stone Craft scottishstonecraft.com; **Savannah Hardscapes** savannahhardscapes.com

Metal Alcoa alcoa.com; **J.M. Gruca** architecturalglassrailing.com

Millwork Savannah Millwork savannahmillwork.net; **DuPont (Corian)** dupont.com/corian

Paints and Finishes The Sherwin-Williams Co. sherwin-williams.com; **SCAD Design Group** (reconditioned timber theater wall finish)

Plumbing and Water System Kohler Co. kohler.com; **Zurn Industries** zurn.com; **Metpar Corp.** metpar.com

Roofing Firestone Building Products www.firestonebpc.com

Seating KI ki.com; **Design Within Reach** dwr.com

Site and Landscape Products Design Within Reach dwr.com; **Lewis & Sheron Textiles** lsfabrics.com; **Kolo kolo** kolo.com; **Landscape Forms** landscapeforms.com; **Belson Outdoors** belson.com

Structural System Steel Erectors steelerectorsinc.com; **Wallcoverings** USF Graphicstudio (Trenton

Doyle Hancock, limited edition screen printed wallpaper—*Flower Bed II: A Prelude to Damnation*) graphicstudio.usf.edu

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Windows, Curtainwalls, and Doors Kawneer kawneer.com; **Glass Systems** glasssystems.biz;

Graham Wood Doors, an Assa Abloy Group Co. grahamdoors.com; **McCarthy** mccarthyinc.com



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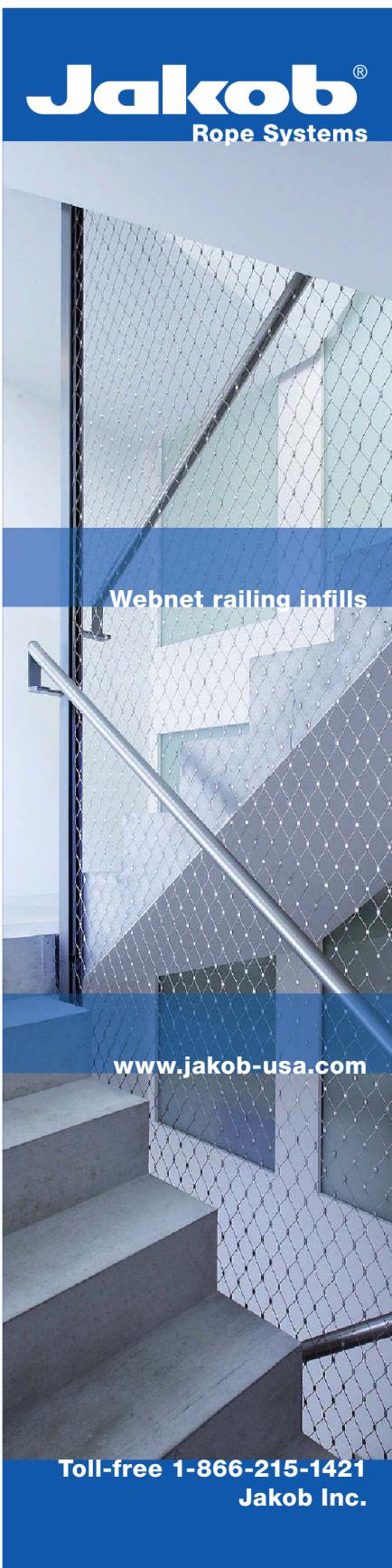
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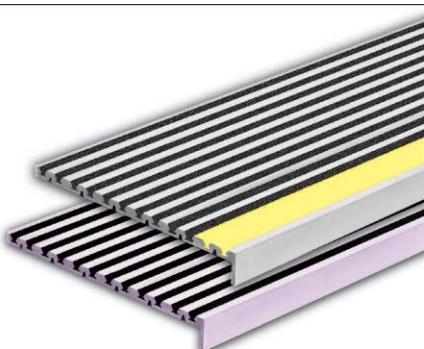
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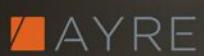


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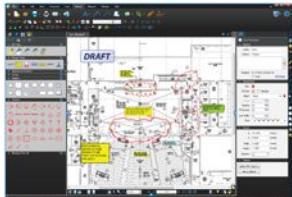
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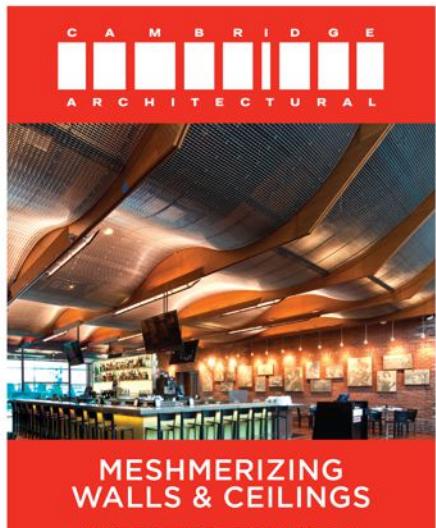
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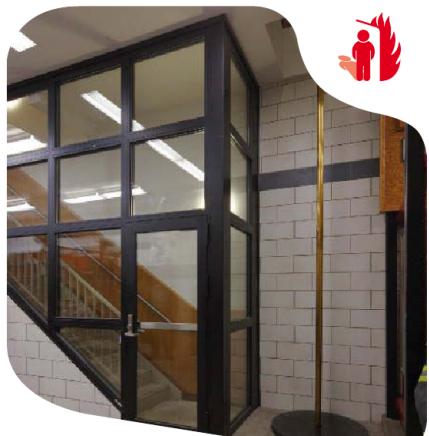
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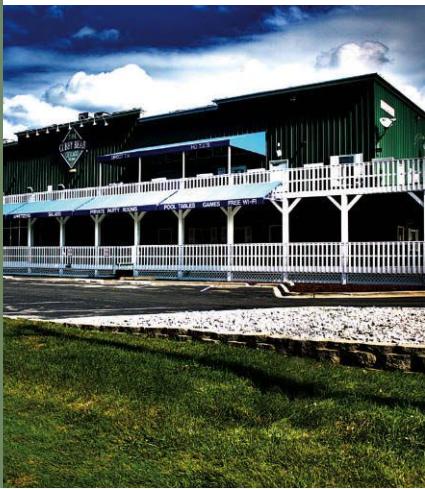


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STEVEN HOLL'S KANSAS CITY ART MUSEUM PROJECT IS AT ONCE A SENSITIVE ADDITION AND A LANDMARK OF ITS OWN TIME.

AT THE ADVENT of a new millennium, the jurors for the 47th annual P/A Awards selected 14 projects that “push[ed] the limits of invention and originality.” Steven Holl Architects won two of those awards—one for MIT’s Simmons Hall student residence and one for the project revisited here, the Bloch Building at the Nelson-Atkins Museum of Art in Kansas City, Mo.

Holl’s firm had won an invited design competition for this addition with a scheme radically different from other contenders. Instead of blocking views of the existing building’s imposing front or back façades, Holl, FAIA, stretched his extension along a constricted area to one side. The bulk of the resulting 840-foot-long structure is sunken beneath berms, from which rise a series of glass-clad volumes. Whether refracting daylight or glowing from within at night, these forms

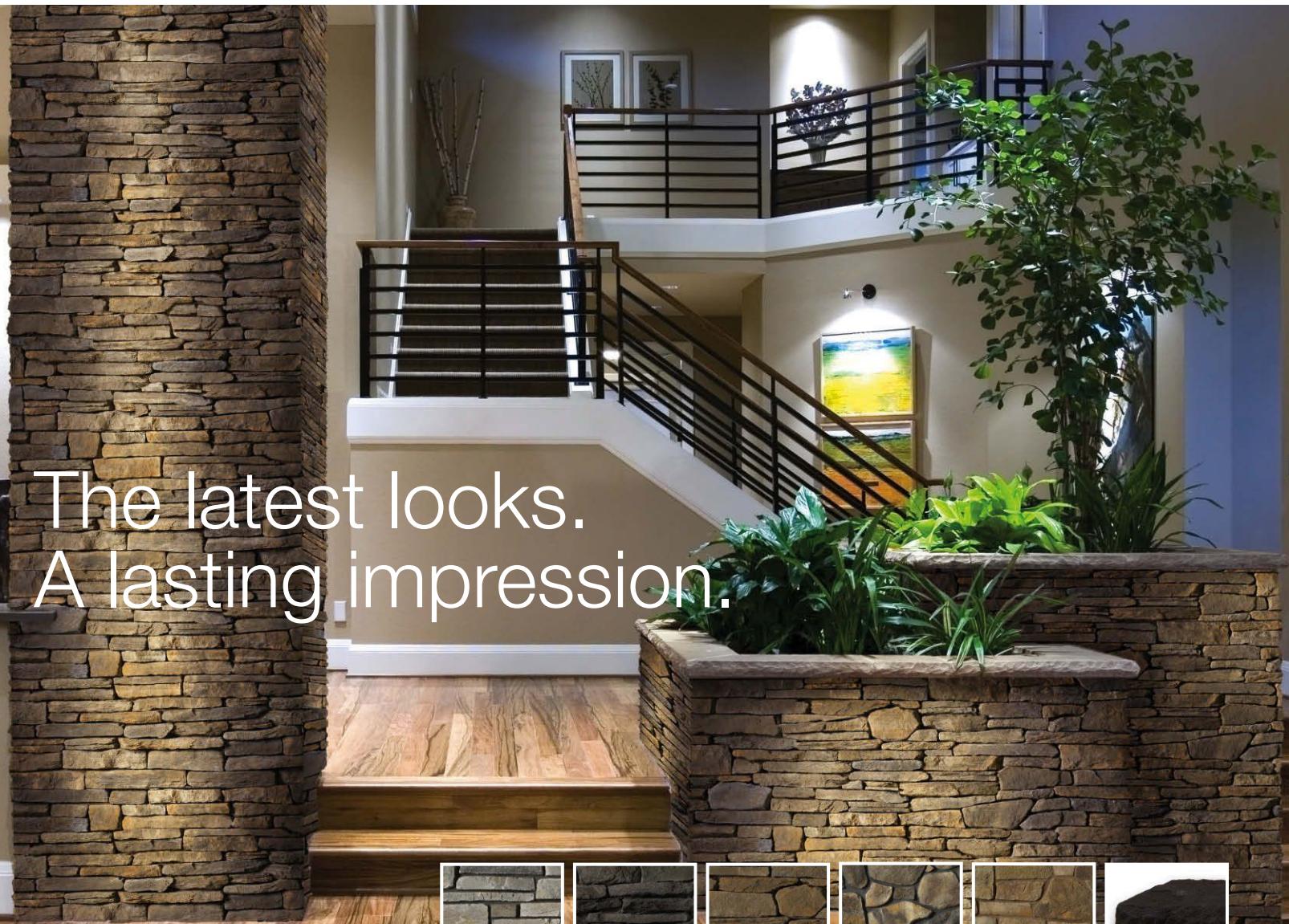
are distinctive and bold, yet they defer in their scale and translucency to the emphatically solid 1933 building.

The apparent delicacy of these volumes is made possible by the ingenious structural engineering of Guy Nordenson, Holl’s perennial collaborator. Supporting each of them from a central spine makes their column-free envelopes possible. Light from the translucent glazing enters the exhibit spaces through clerestories and is dispersed across curved surfaces that conceal structural-mechanical innards. The meandering layout of the galleries provides for spaces that vary advantageously in scale and sense of enclosure.

During a period of additions to many similar institutions, the Holl team showed how such a project can be both an exemplary expansion and an architectural milestone. □

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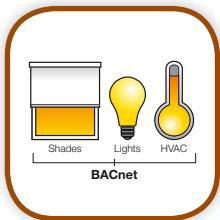
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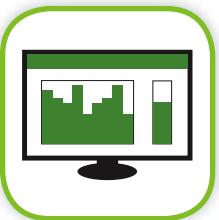
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